Issue 215
PS
1970 Series
October
THE PREVENTIVE MAINTENANCE MONTHLY
THIS IS THE FOURTH TIME WE CLEANED THEM FILTERS THIS WEEK!
CHARLIE IS LISTENING
COFF
GASP
COMMO
JUST THINK OF IT THIS WAY, TURTLE... IN A COUPLE OF MONTHS THIS WILL ALL BE MUD.
SOAP
WILL EISNER

MAINTENANCE IS HEADED FOR MORE

MAINTENANCE SUPPORT – POSITIVE

PS issue 213 told you about Inventory in Motion which is part of the Army's Logistics Offensive. This reshuffling of maintenance jobs is also part of the Log Offensive. It's called Maintenance Support Positive or MS +, for short.

For what it's all about, read on —

Changes are being made in regulations, manuals, TOE's and all sorts of rule books to give you fighting men less of the maintenance work. That'll leave you the big job of fighting . . . like you signed up to do.

When this deal gets going it will leave the using unit with Preventive Maintenance services and minor repair tasks. This will include cleaning, minor adjustments and replacement of some parts, components or modules.

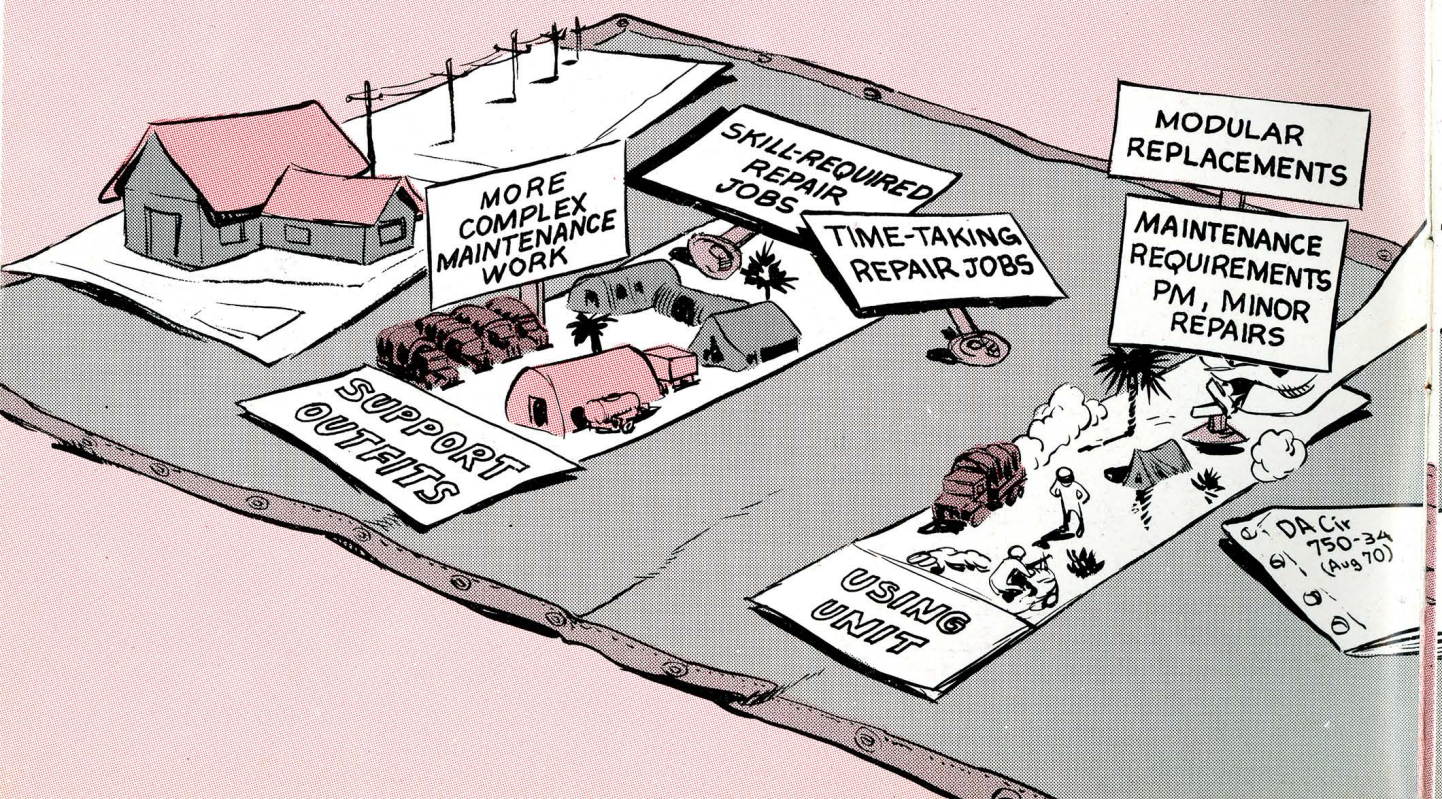
The replacing of these will be real easy jobs . . . those that don't require as many highly trained specialists. Simple and easy-to-use test gear will be all that you'll use. The Go-No Go type, in many cases.

The more complex jobs will go back to DS and GS units.

That'll leave you with less maintenance and fewer parts to stock.

DA Circular 750-34 (Aug 70) gives you more scoop on Maintenance Support Positive.

MS +



MAINTENANCE IS HEADED FOR MORE EFFICIENT METHODS

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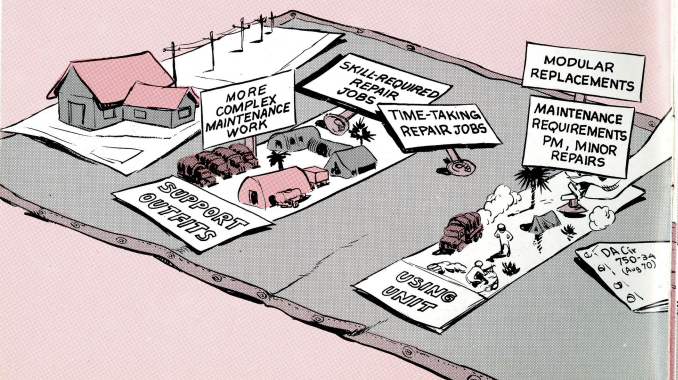

CO$T-EFFECTIVE MAINTENANCE

Those FSN's

All FSN's appearing in PS Magazine are listed in the current AMDF (Army Master Data File) microfilm. The AMDF microfilms are in the hands of most DSU's. AR 700-1 says that the AMDF takes precedence over all other supply data.

PS

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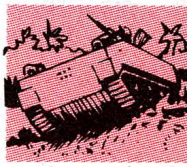

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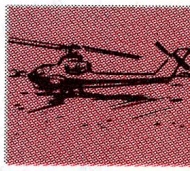

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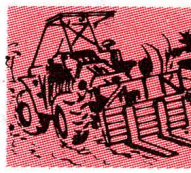

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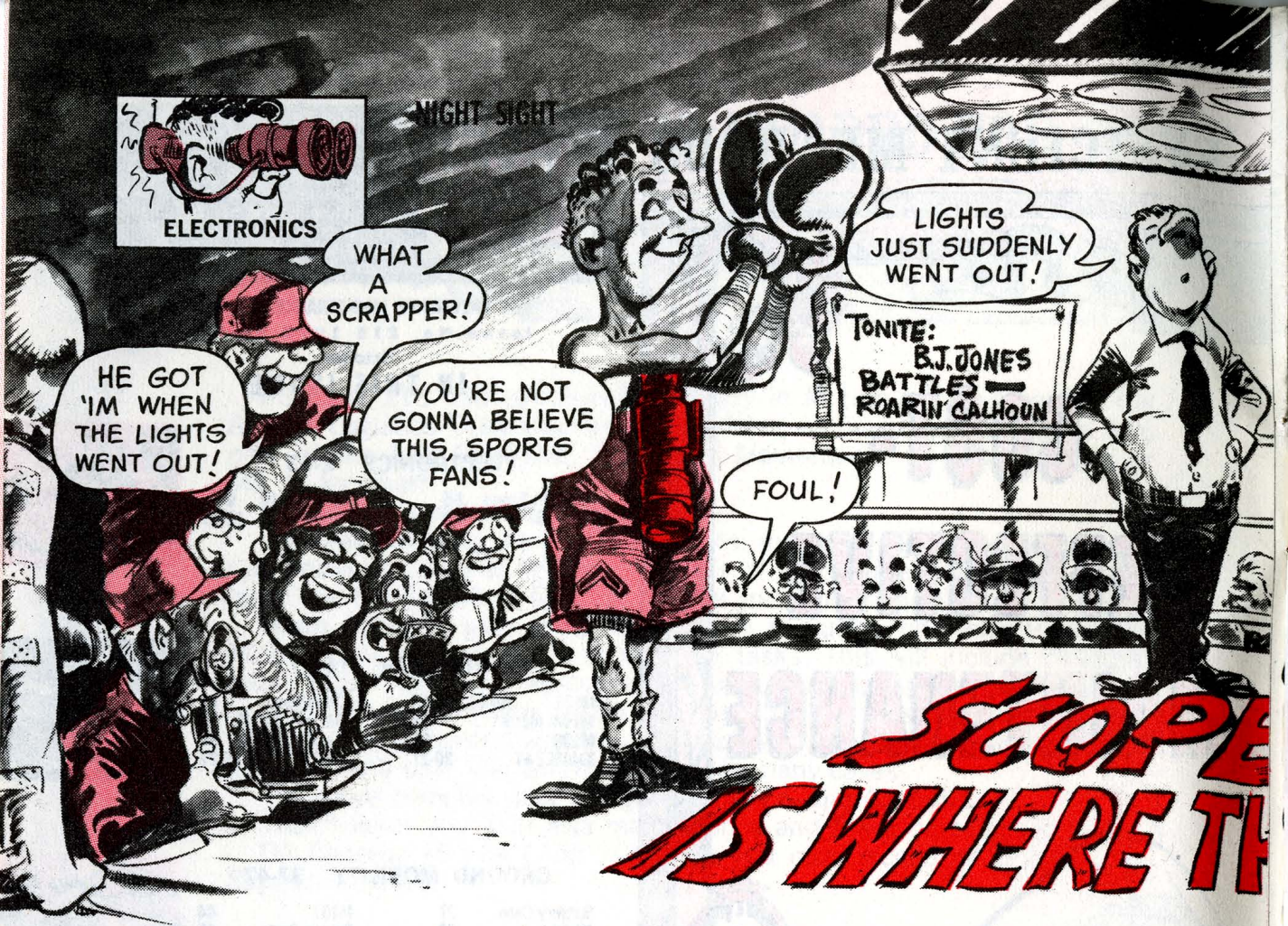


SCOPE IS WHERE TH

Night vision equipment is where it's at. Compare it to the eyes of a gladiator.

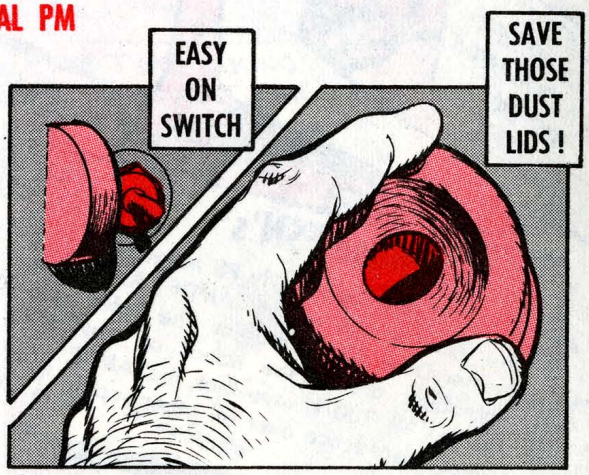
Take away your Starlight Scope at night and it's like swinging a club blind. And, blind gladiators leave the arena horizontal-like.

So, here're some reminders that'll help you stay vertical:

Stay out of the scopes or for sure you'll foul 'em up. Just taking 'em apart and putting 'em back together can get 'em out of whack.

So get a qualified repairman . . . if you need him. Otherwise, stay out!

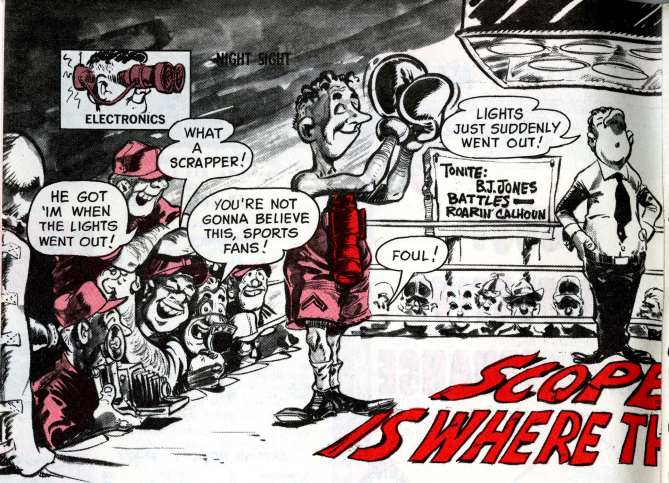
GENERAL PM



Easy with the power switch on the smaller scopes. Slight pressure is all you need to flip it. Muscle tears it up.

Dust lids in the eye shields of the scopes are there to keep dust out when you're not using them. The pressure of your head against the shield opens the dust lids.

Don't cut 'em out. They belong there.



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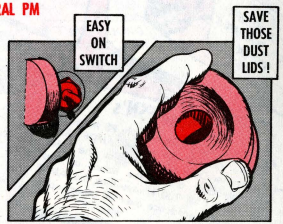

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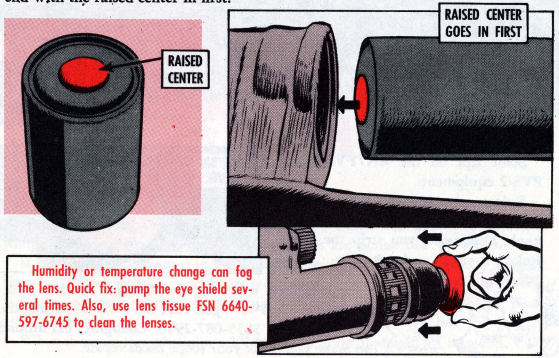

Humidity or temperature change can fog the lens. Quick fix: pump the eye shield several times. Also, use lens tissue FSN 6640-597-6745 to clean the lenses.

PS MORE

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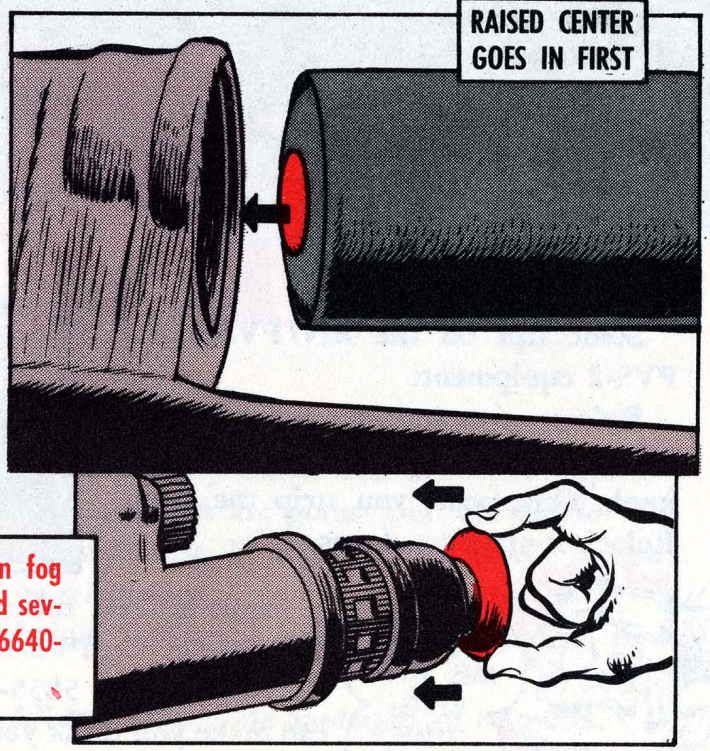

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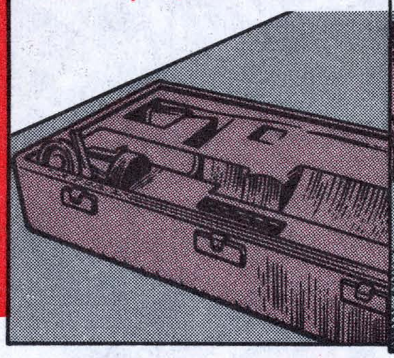
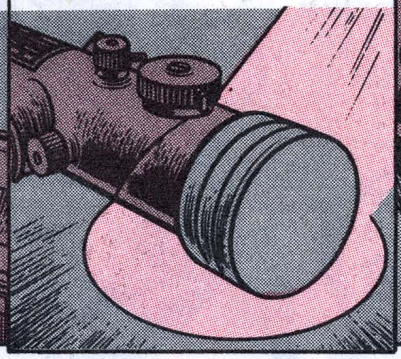
PS MORE

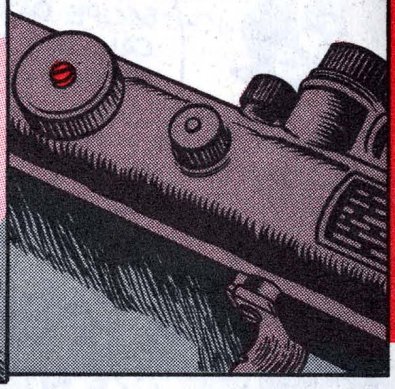
Keeping the scope dry is a must. If it's stored, open the case regularly and sop up moisture. You might even have to do it daily in real humid areas.



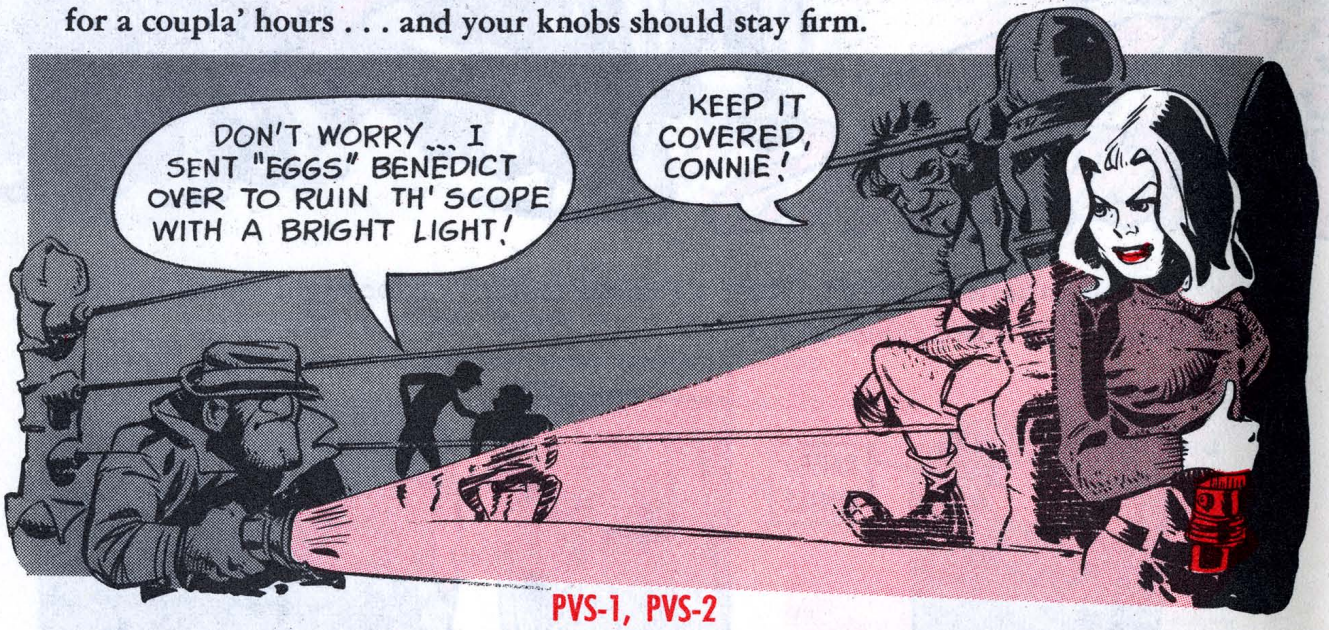
Never, but never, expose the lens to bright light, like headlights and sunshine. That can really do in the guts of the scope.



Loose screws can keep you out of focus . . . especially on elevation and azimuth adjustment knobs.



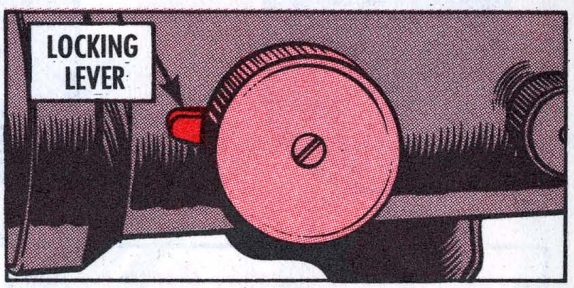
So if they're loose, slip 'em a dab of sealing compound, like FSN 8030-081-2329, which you dab on the threads before tightening 'em up. Then, let 'em set for a coupla' hours . . . and your knobs should stay firm.

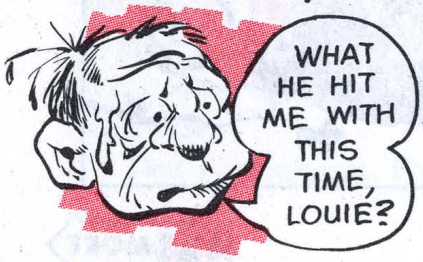


PVS-1, PVS-2

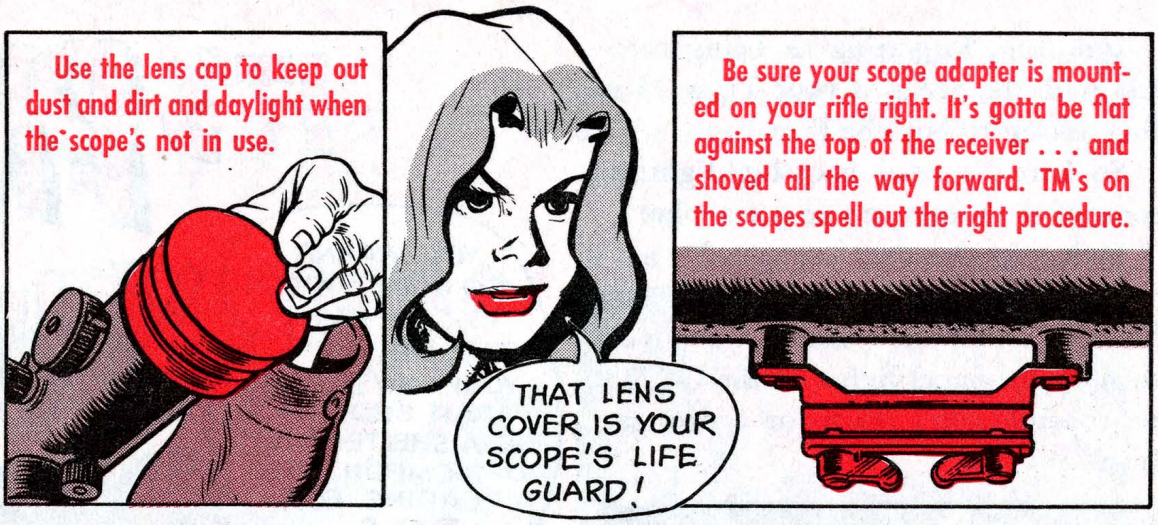
Some tips on the AN/PVS-1 and PVS-2 equipment:

Release the locking lever on the PVS-1 before you turn the focusing knob. Otherwise, you strip the knob. Relock it after you focus.

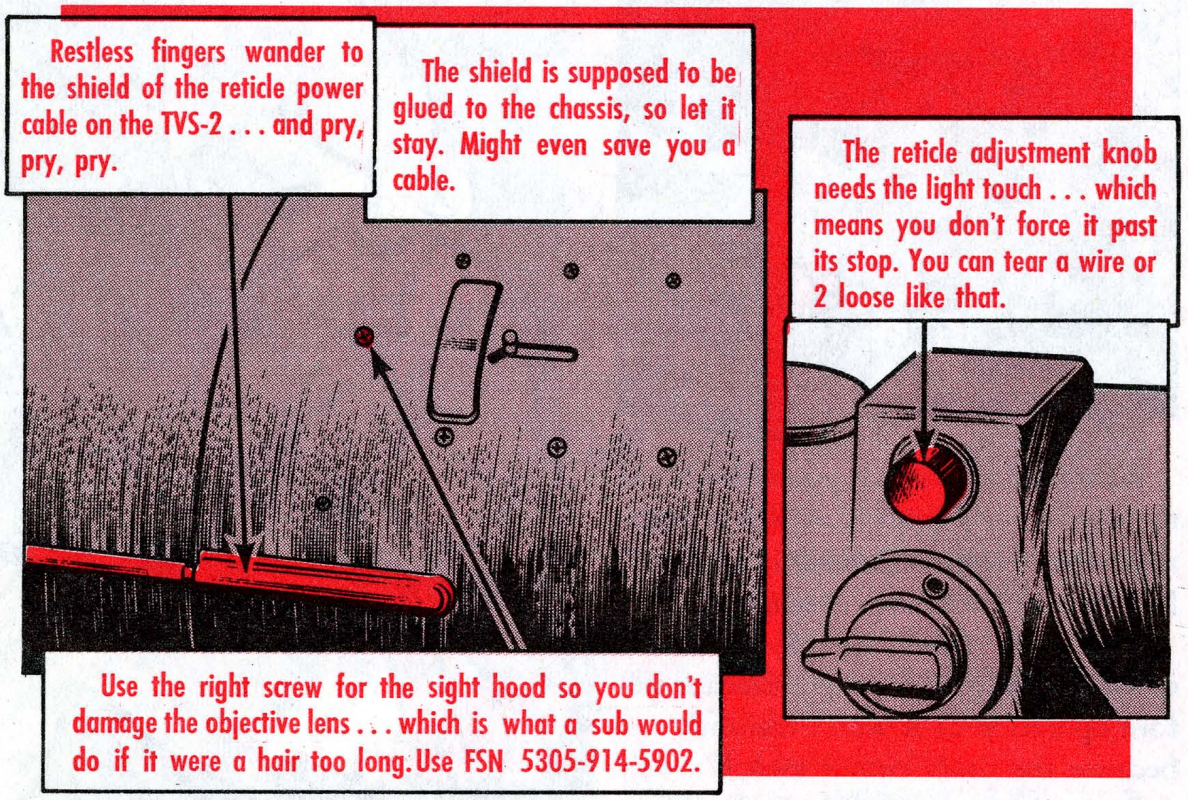




Intensification tubes for the 2 scopes are not interchangeable. The PVS-1 gets FSN 5855-051-2792, and the PVS-2 gets FSN 5855-087-2948. Changing 'em around can make you think your scope needs repair.



CREW-SERVED WEAPON SCOPE



FINAL REMINDERS

Your scopes are precision instruments, finely tuned and delicately adjusted. Rough handling, bouncy rides and carelessness are gonna put 'em down.

If you're gonna transport it, put it in its case. If you're gonna handle it, don't slam it on the ground, a vehicle, or whatever.

Protect the lens, always, from bright light, and keep your rice-pickin' paws away from its guts.

When it comes to nightsight, a li'l foresight beats hindsight all to pieces.

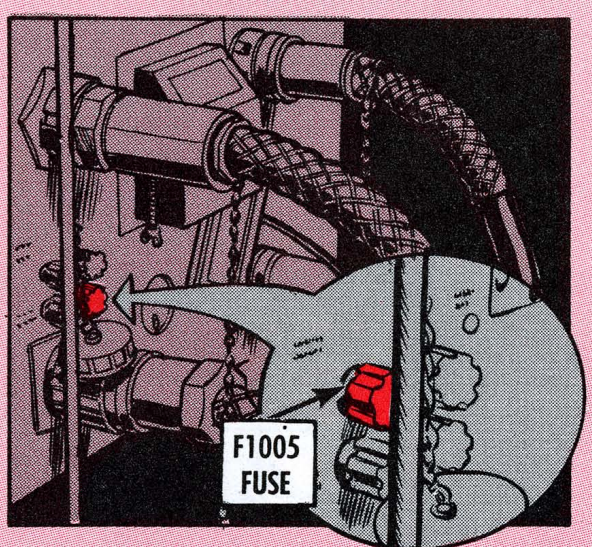
IT'S PM YOUR

Ignoring, forgetting or being careless with the needs of your Tipsy-25 is like asking to buy the farm.

So here's a road map highlighting some of the routes you've gotta take:

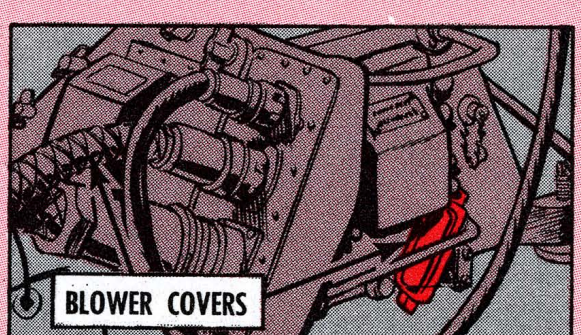
Halt mitt der overfusing.

If the F1005, 3/4-amp fuse in your SN-231 coordinator blows when you turn up the panel lights on the C-2715 set control, don't reach for a stronger fuse.



Instead, have your support check out the circuit for a short. . .which is probably what's wrong. Putting in a heavier fuse can do a lot more damage.

You gotta remove the blower covers of the RT-500 receiver-transmitter before operation or it won't transmit . . . because the draft cutout switch won't activate. And, uh, that's both covers. . . .



Be sure the upper screw in the bar latch of the interlock switches (modulator, coordinator and set control) is snugged all the way up . . . or you won't get power to the components when you need it. The screw has to be tight.

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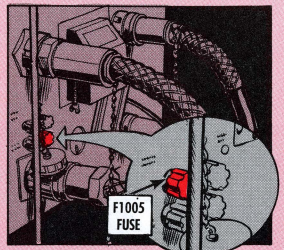

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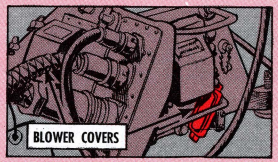

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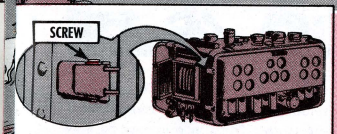
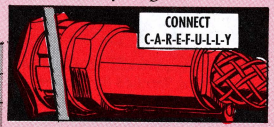
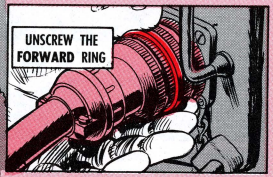


An everlasting reminder or two on cables and connectors: Remove cables at the connector. You can't beat the odds by yanking the cable.

Also, line up the keyway or the pins, or both, before you tighten a connector.



And, on the double-ring type connectors, unscrew the forward ring to release the connector. Turning at the rear ring can twist wires off.

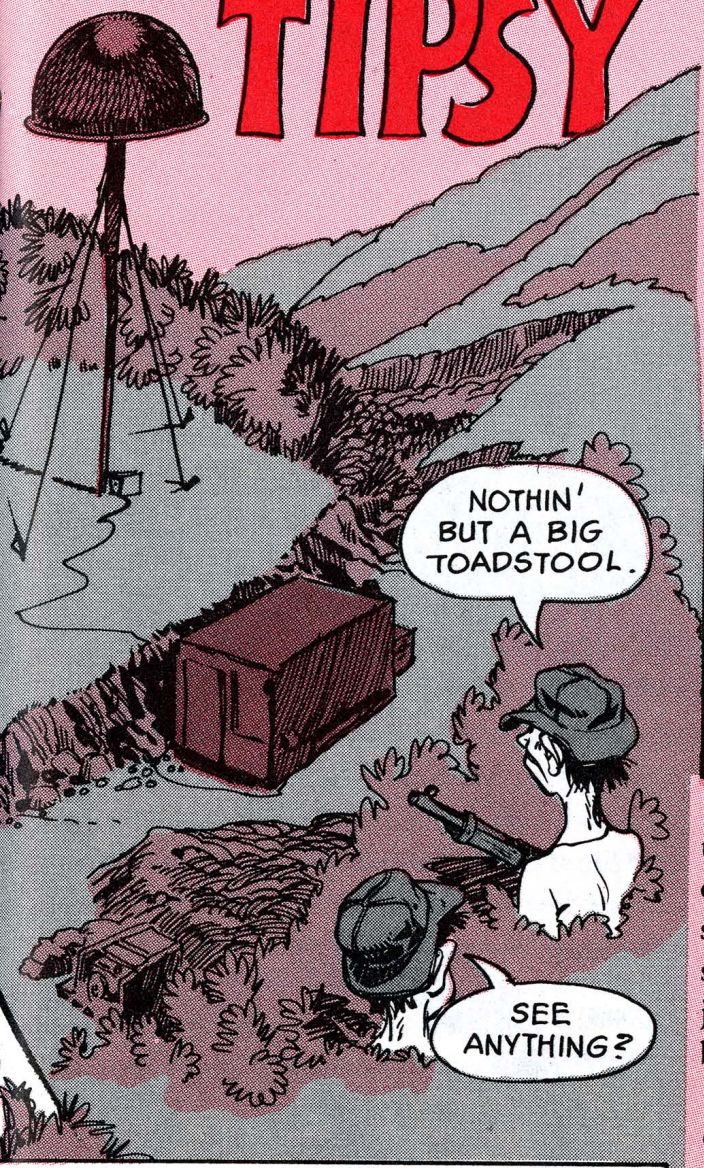


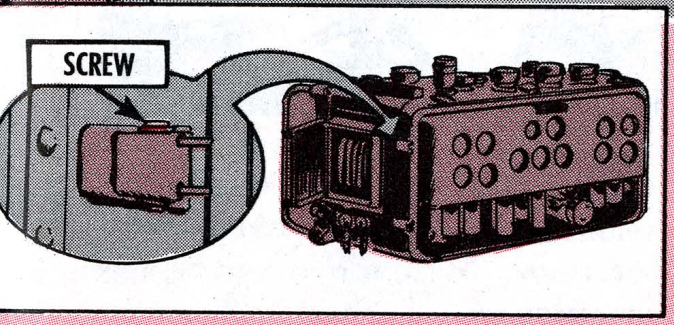
Like was said, you can't beat the system with shortcuts like cable-yanking or forcing a connector into place. That stuff catches up to you, and the repair shops have the proof. And if you should just happen to need a set that's laid up because of a busted cable. . . .

When the set control is out of the shelter, you must have the shorting connector (for pins D and C) in place on the J1603 jack.

PS MORE

TIME FOR TIPSY





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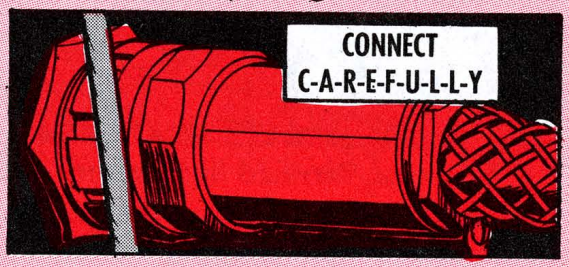

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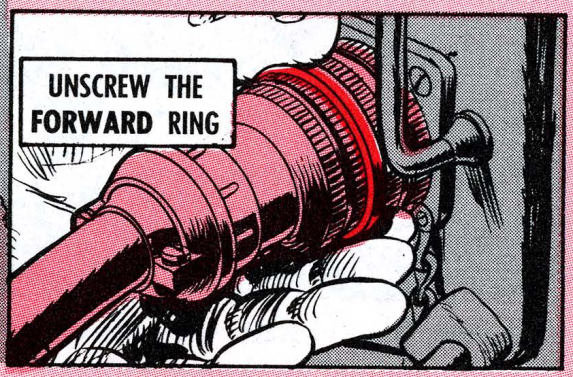

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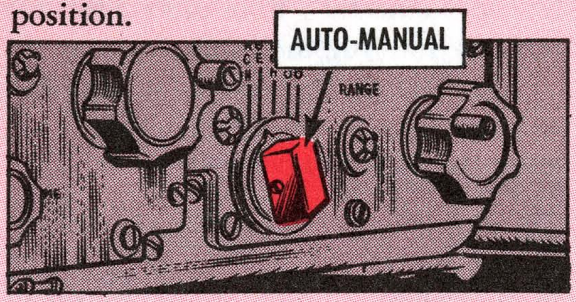
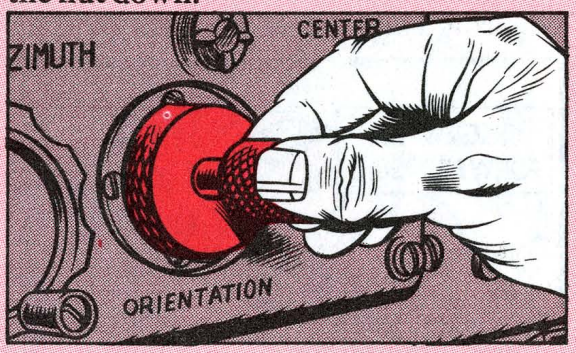
PS MORE

Otherwise, the AUTO-MANUAL switch won't work in the SEARCH position.

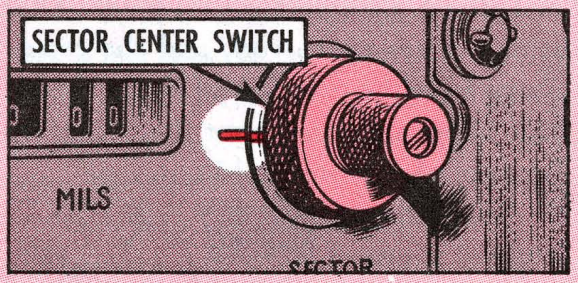


The round, serrated outer nut of the ORIENTATION knob (on the set control) must be tight in order for the adjacent AZIMUTH handwheel to turn.

If the handwheel doesn't turn, snug the nut down.



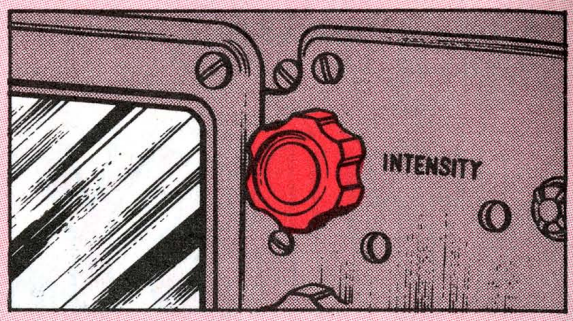
When you reset the SECTOR CENTER switch on the set control, be sure the white line on the panel alines with the line on the switch.



It's alined correctly when you can feel pressure just a short turn to right or left on the switch.

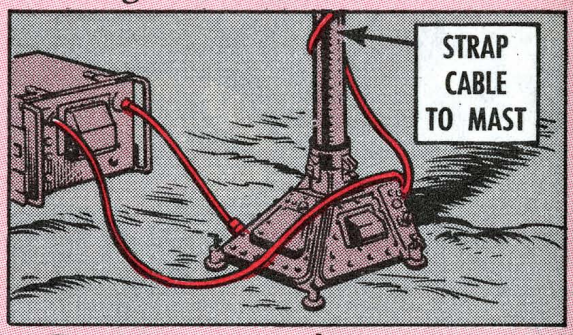
If the switch isn't alined, you'll be 180 degrees out of phase when you set the AUTO-MANUAL switch to "SEARCH," which will give you an inaccurate reading on the MILs scale.

Stay loose with the INTENSITY knob on the set control. Avoid turning



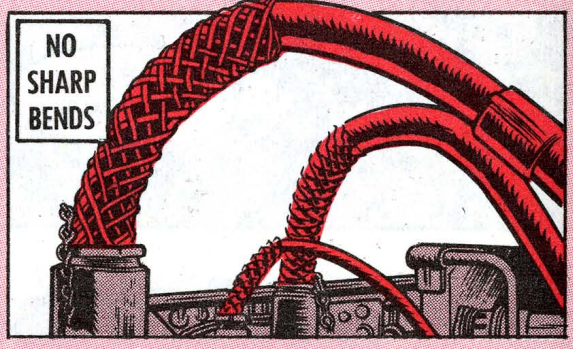
it too high . . . which burns the scope.

Strap the receiver-transmitter antenna cable to the mast . . . or use a clamp . . . or wrap it around the mast to keep it from flapping in the breeze and breaking.



Be sure parts and components are stowed properly in the shelter before you roll off with it.

Final tips: Avoid sharp bends in those heavy cables. The wiring breaks.

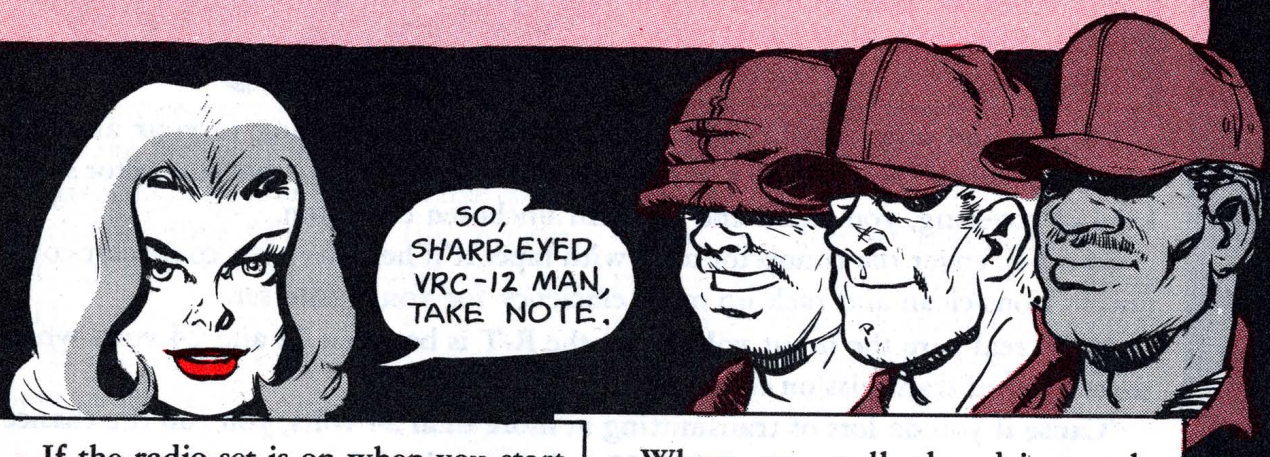


And once you've got your Tipsy-25 working, try not to move it unless absolutely necessary. Surprising what a short move'll do to an otherwise happily operating set.

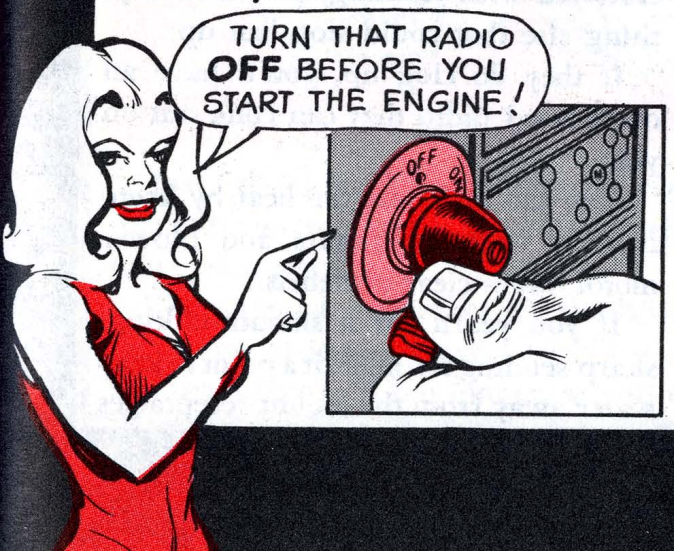
THE AN/VRC-12 RADIO SERIES —

VRC MISCELLANY

That AN/VRC-12 radio series can talk up, listen up, and hold up — as well as you'd expect — but facts gotta be faced. It's sensitive!

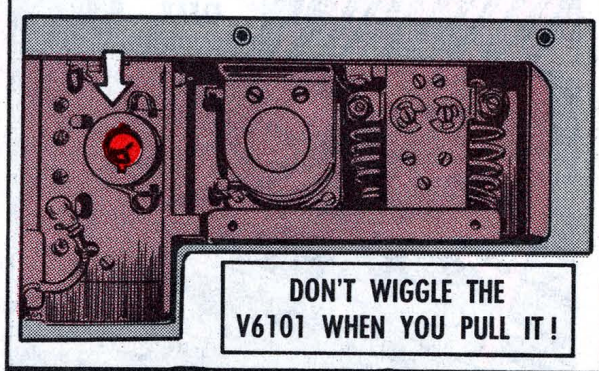


If the radio set is on when you start your vehicle . . . well, then, you could pick up a little learnin' the hard way . . . like when a sudden power surge maybe conks out the transistors. So, turn that radio off, before you stop or start the engine of your vehicle. That oughta cut down the conk-outs. Get DA Label 132 to stick in your vehicle as a reminder.



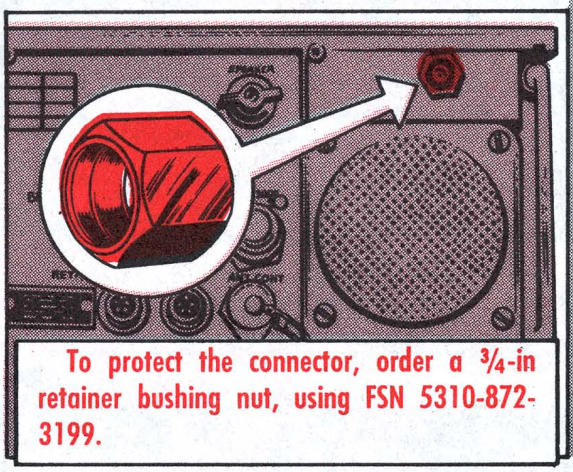
When you pull the driver tube (V6101) from the RT-246 or RT-524 receiver-transmitter of the AN/VRC-12 models, it's pretty easy to wiggle the tube.

This is not so good, 'cause the wiggling can make the pins bend and knock out the efficiency of the tube if it doesn't fit in right. So, easy does it.

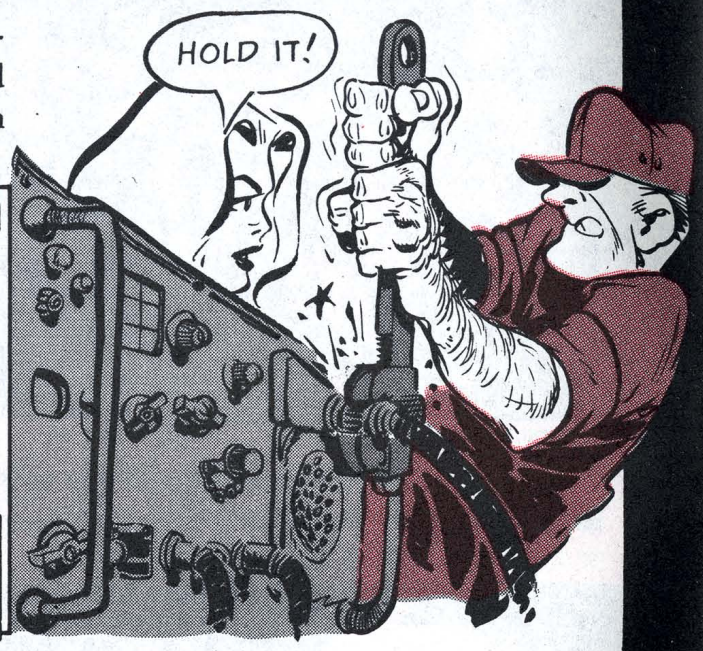


P.S. MORE

A mashed or squashed antenna connection won't do the job it's supposed to . . . like, say, the J301 connector on the R-T.



To protect the connector, order a ¾-in retainer bushing nut, using FSN 5310-872-3199.



Climate and other local conditions can give a real clubbing to your antenna connector when the antenna's not installed. If you don't give that connector some kind of covering, you could end up with unchosen corrosion.

So-o-o-o, cover the connector area with tape. It'll help keep the connector communications-clean and rack up more efficiency for your radio set.

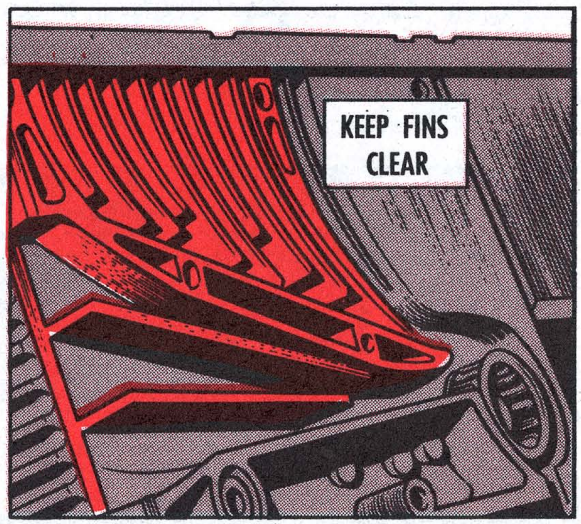
Make real sure the input voltage on the R-T is between 22 and 24 volts when there's lots of transmission coming up.

'Cause if you do lots of transmitting at more than 24 volts, you run the chance of damaging your radio set. Below 22 volts, you don't have enough power.

These VRC-12 R-T's were programmed for 25.5 volts and designed with a 9-to-1 receive-transmit ratio.

But too much extra transmitting can bring on the heat and damage the set.

Whatever your voltage, never keep that transmitter keyed for more than 15 minutes at any one time. That way, you oughta come up roses.



Talking about heat, better keep the blower intake and exhaust ports uncluttered with clothing, packs, or anything else that could stop 'em up.

If they do clog up, you'll have an overheated radio that can conk out on you.

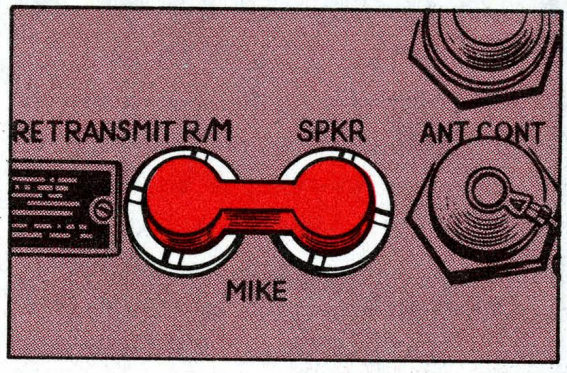
You can also beat the heat by keeping the heat exchangers and blower motor vanes clear of debris.

If you yearn for a smooth-talking, sharp-sending set, make it a point to keep water away from the mount receptacles

on the MT-1029 or MT-1898 mounts. These receptacles are vulnerable to corrosion under watery conditions, and when the receiver-transmitter's out, fine sand or dust can add to the troubles.

When you've got one of these mounts that's not protected by its installed R-T, cover the receptacle with a piece of tape or go after an electrical receptacle cover with FSN 5935-911-2323. It's on page 91, Ch 4 to TM 11-5820-401-20 (Dec 61).

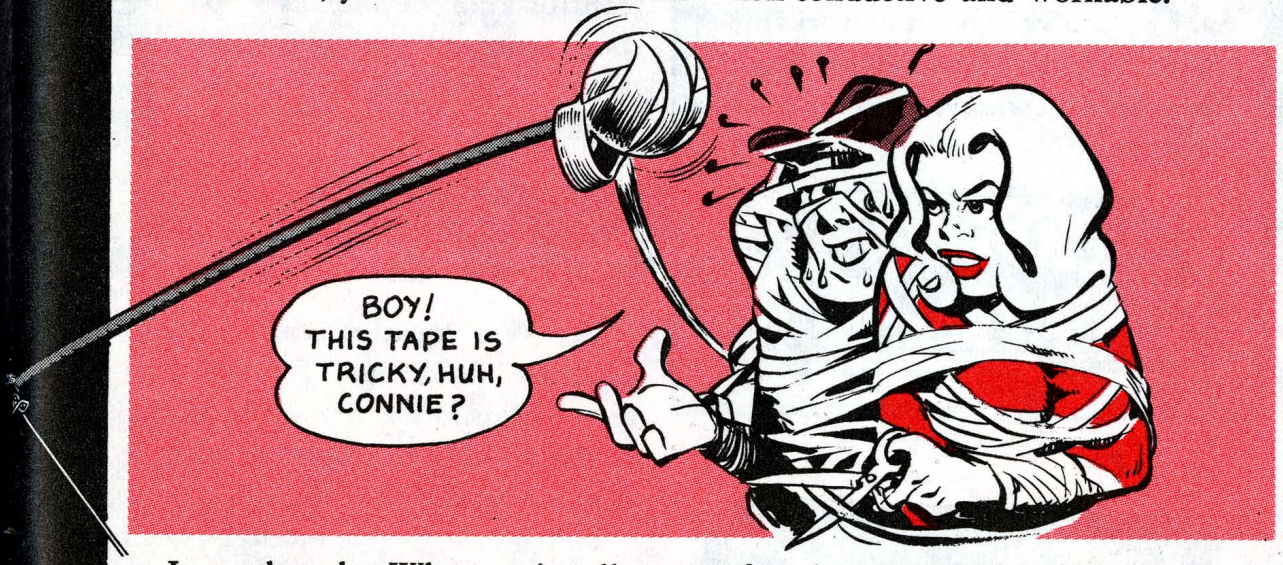
If you need to square off against dust and moisture, you can latch onto some



audio connector caps for your receiver-transmitter. The caps go by FSN 5935-973-1732. This'll also cover the caps on the AN/PRC-25 radio set.

Any Joe—even if he's pretty watchful—is liable to forget and ram the sharp end of a tied-down antenna in his face or eyeball. So what to do with that pointed pole?

You can dull its sharpness with a rubber ball, some plastic, a bottle stopper, a cork, or several thicknesses of tape—or anything else similarly non-conductive and workable.



Just a thought: When you're all wrapped up in your vehicle and think what a fine radio set you've got, don't get careless and drive right up on a parked chopper to see what gives.

The antenna—whether it's the AS-1729 or the AT-912—can produce some real havoc if it gets playful with a whirling rotor blade. Allow a little leeway and that antenna'll last longer; so will the rotor.

PS END

6 MORE SHORTIES...

For 5×

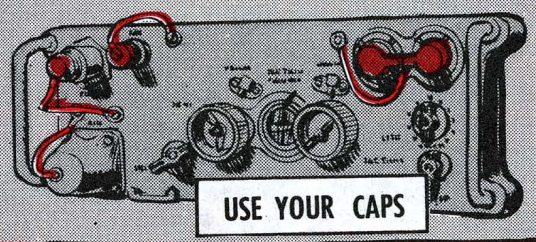
1. Those 4 nylon lanyards on the front of your RT-505 receiver-transmitter aren't just put there to look pretty — they're to hold the caps that knock out the dust and moisture that can knock out an AN/PRC-25 radio set.

Take good care of those nylon cords, and watch out for those mighty important caps, too. If one of the cords gets torn off, or knocked off the R-T, that means its cap goes with it.

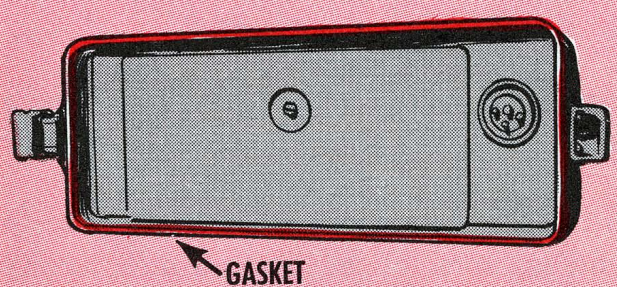
Or you could snap your cap and lose it from its nylon cord.

Best be careful, natch — but just in case one of those dust-defying caps does slip its tether, you can get replacements.

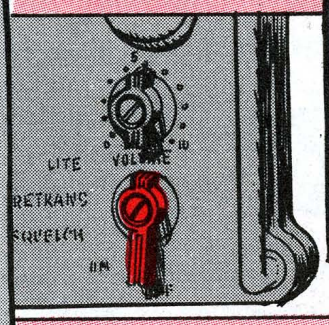
They're all listed on Page AIV-7, Ch 1 TM 11-5820-398-12 (Nov 65) covering the dummy cap (without which you've got no workable radio), the audio connector caps, the short antenna cap, and the long antenna cap.



USE YOUR CAPS



GASKET



2. Power to the set is controlled by the ON-OFF switch right below the volume switch. The ON-OFF is what you use for a shut-off.

You can't snap off the radio set with the volume-control switch of the RT-505. If you run across anybody trying this, slip 'em the good word, huh?

Trying to force the volume-control knob beyond its stop-point can strip it and point your R-T toward the maintenance shop.

3. Wet weather can deposit moisture inside the RT-505 receiver-transmitter of your Perk-25, or the RT-841 receiver-transmitter of the AN/PRC-77.

So-o-o-o, if there's moisture and you have worn-out rubber case gaskets, replace 'em — or, if you don't have any gaskets at all — you can requisition 'em using FSN 5820-973-3960.

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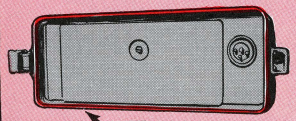

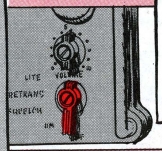

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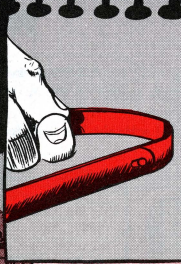


4. When you fold that AT-892 short whip antenna, be sure you're not folding in the wrong direction.

Fold your AT-892 toward the concave side before placing it in a carrying bag. A wrong-way fold could easily goof up your antenna, like maybe breaking or weakening the metal and affecting its efficiency.

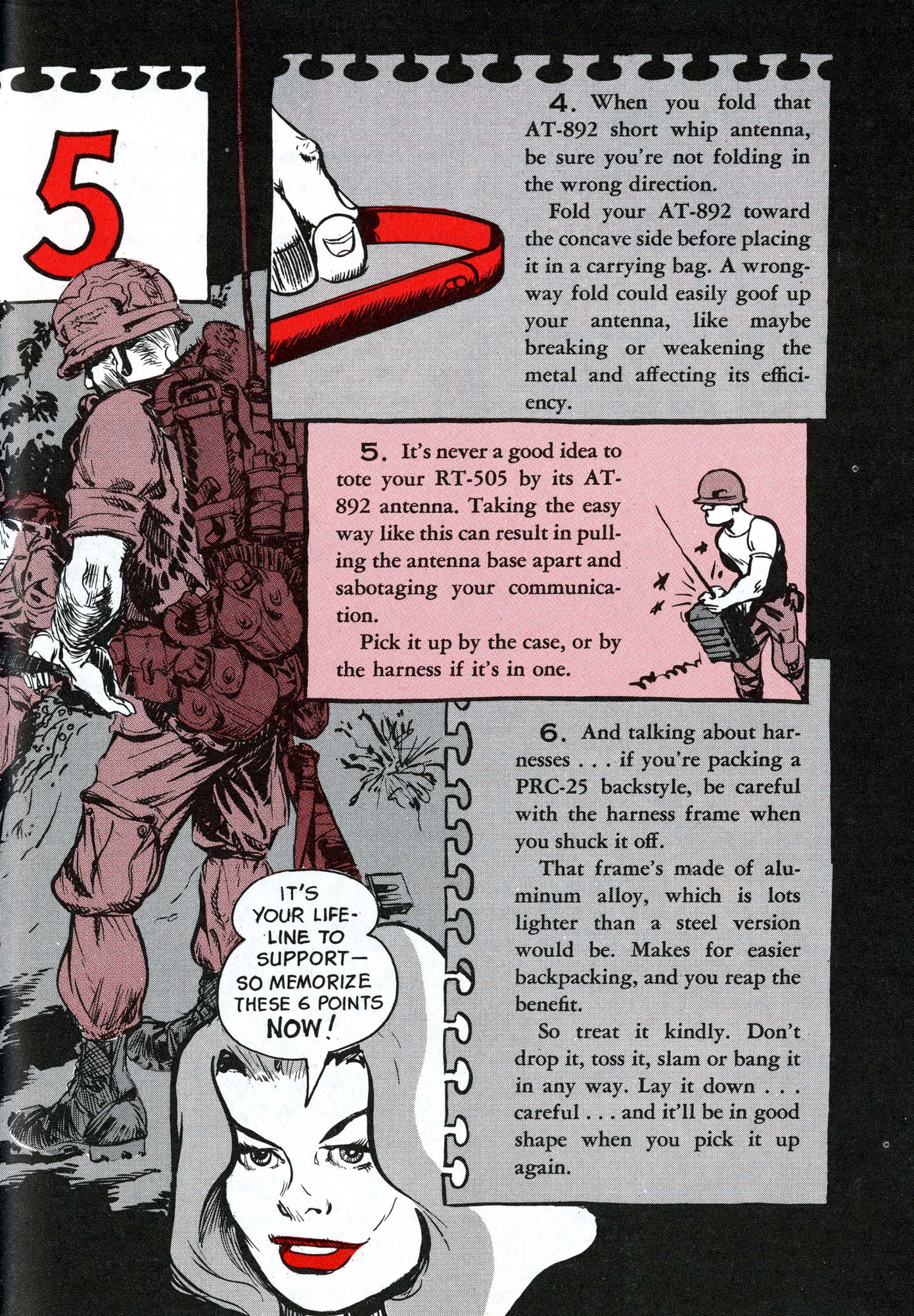
5. It's never a good idea to tote your RT-505 by its AT-892 antenna. Taking the easy way like this can result in pulling the antenna base apart and sabotaging your communication.

Pick it up by the case, or by the harness if it's in one.

6. And talking about harnesses . . . if you're packing a PRC-25 backstyle, be careful with the harness frame when you shuck it off.

That frame's made of aluminum alloy, which is lots lighter than a steel version would be. Makes for easier backpacking, and you reap the benefit.

So treat it kindly. Don't drop it, toss it, slam or bang it in any way. Lay it down . . . careful . . . and it'll be in good shape when you pick it up again.


5
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IT'S YOUR LIFE-LINE TO SUPPORT— SO MEMORIZE THESE 6 POINTS NOW!

M551 TRACK

Like the TV ads say, some people can't brush after every meal. Likewise, it is not always possible to check the track tension on the M551 like it says in TM 9-2350-230-12 (Jun 66).

When you can't use the string and scale the TM calls for, here's an alternate way:

Get some object 3½ inches tall (a canteen drinking cup or 7.62-MM ammo box lying on the side will do, or a caliber .50 MG gage fully extended) and put it on the track directly above the No. 3 roadwheel.

Now push the front mud flap back and sight along the track from the idler wheel to the sprocket.

If the 3½-inch object gets in the way of your line of sight, the track is too tight. Loosen it with the pressure bleed plug like it says on page 5-13 of your -12 TM.

If the top of the 3½-inch object is along the line of sight your track tension is OK.

SIGHT ALONG THE TRACK—THE OBJECT SHOULD JUST TOUCH YOUR LINE OF SIGHT.

BE SURE YOU'VE STOPPED ON LEVEL GROUND.

LINE OF SIGHT

M551 TRACK ADJUSTMENT

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That's all there is to it.

The string and gage method is the best but when you can't use it this is better than nothing.

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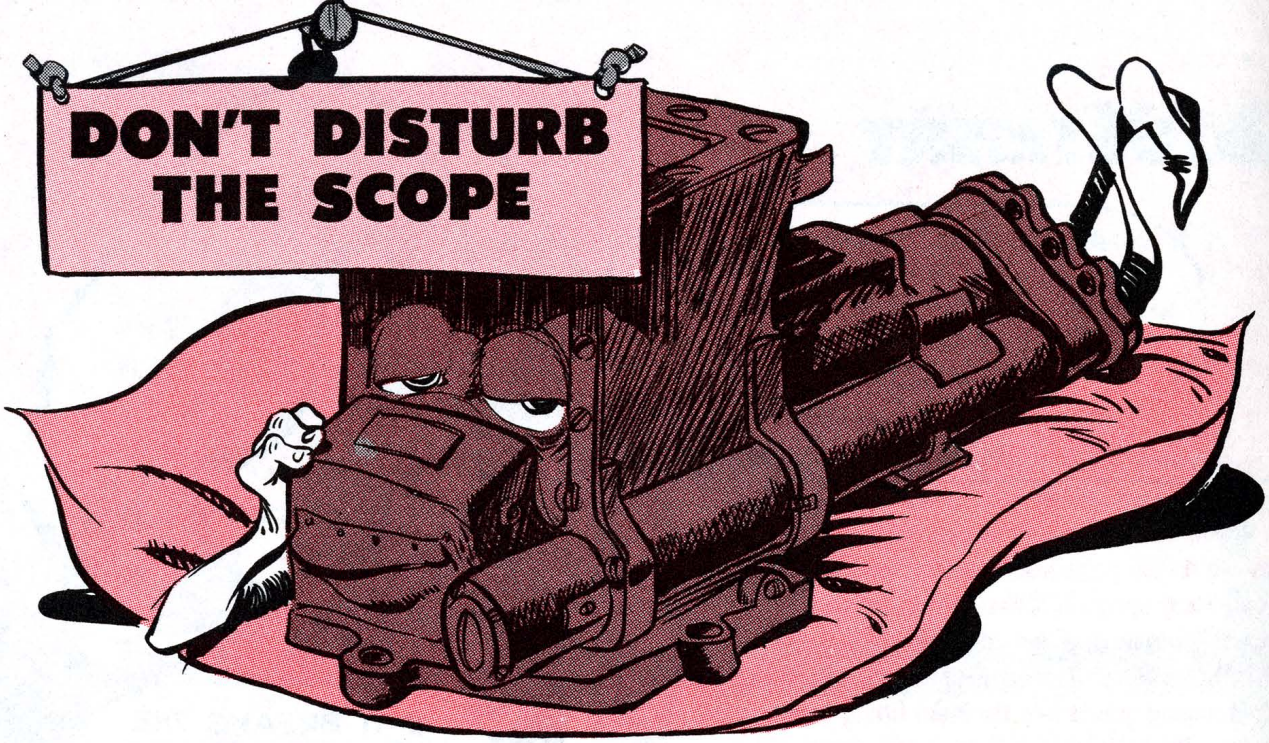
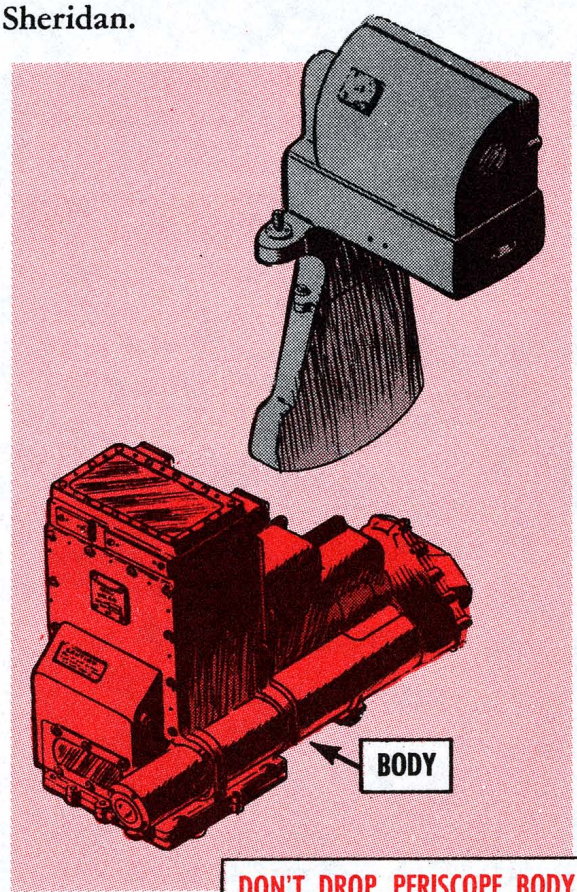
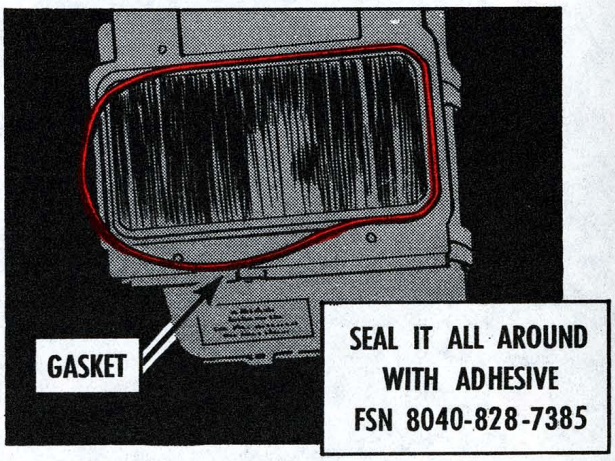


Hang a DON'T DISTURB sign on that XM44E1 periscope any time you feel the urge to make elbow room for turret maintenance inside your M551 Sheridan.



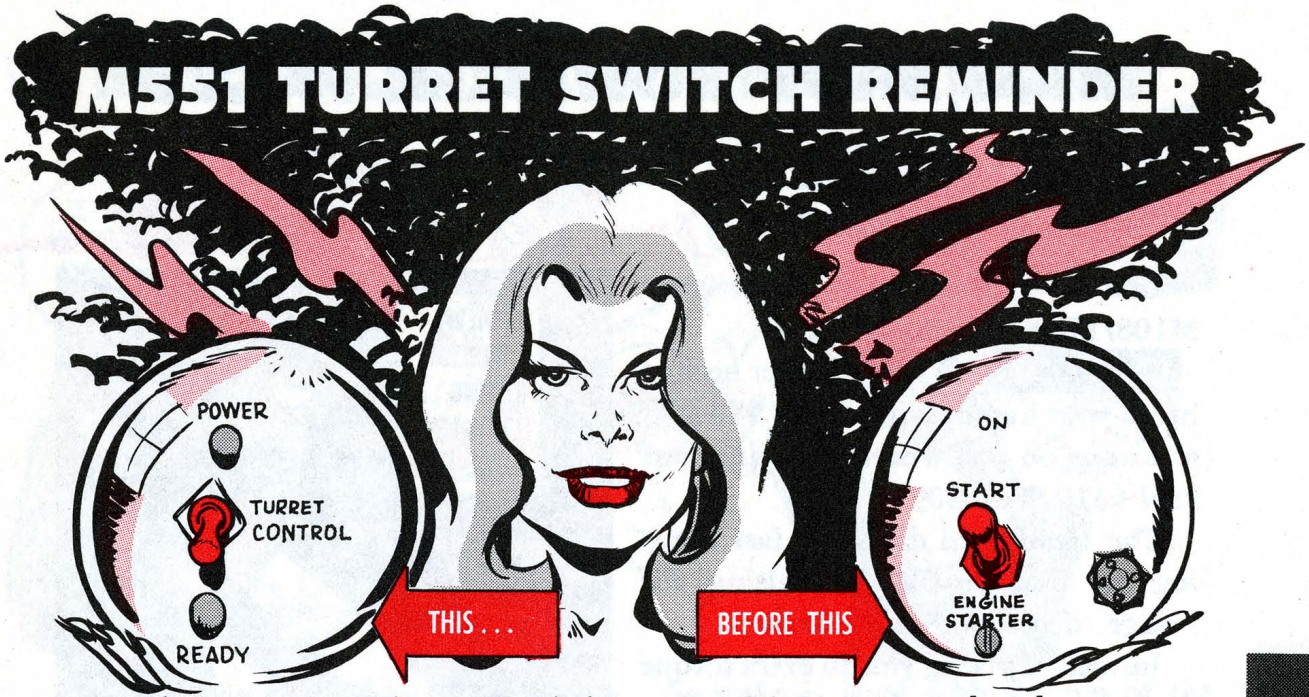
A habit of regularly dropping the body from the periscope head can cost you. Unnecessary handling increases the chance of losing or tearing up the thin rubber gasket between the body and the head of the scope and allows moisture and dirt to collect on the inner optics.

Besides, only the number of fogged-up lenses hints at how many organizational turret repairmen forget to nitrogen purge this instrument each time it's reinstalled.



DON'T DROP PERISCOPE BODY . . . IT'LL MESS UP THE GASKET

M551 TURRET SWITCH REMINDER



Sure the turret control power switch on your M551 command and recon vehicle is real pretty to look at but that's not why they put it there.

It was put there — among other reasons — to be turned off every time before the engine is started.

Sometimes a crewman forgets to turn it off like the TM says before the engine is started during Silent Watch.

This shoots a wad of generator juice through the system and some of the printed circuit items can get burned out.

So-o-o-o, remember the turret power switch has to be off before the driver starts the engine.

SHERIDAN HANGUP OR . . .

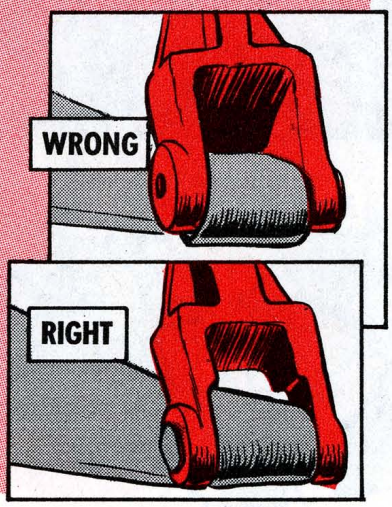
WOULDN'T THAT FRACTURE YOUR LINK?

If you've got an M551 Sheridan, you've got a 50-50 chance of a hanger hangup on your M119 articulated telescope.

Unless you already know that hanger can be installed backward . . . with the slant cuts on the inside of the fork angled down — instead of up.

The wrong installation binds this link if the gun's elevated more than a few degrees.

And wouldn't that fracture your link? You bet your sweet bippy it would!



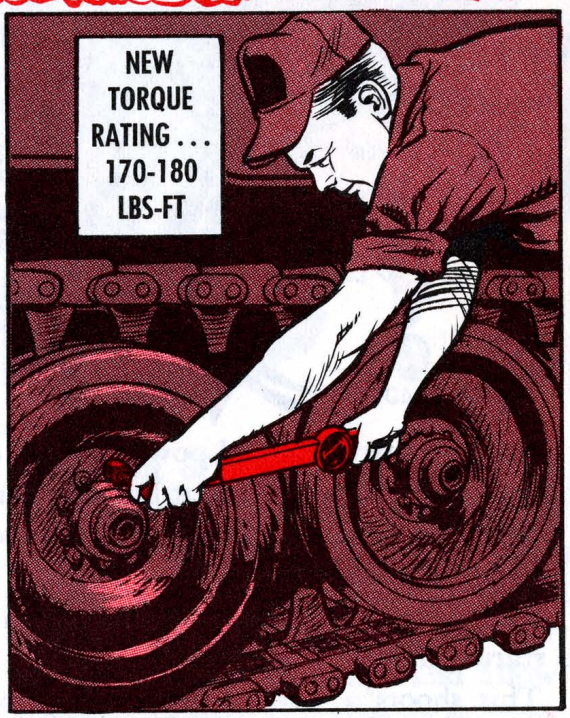
M108/M109 HOWITZER FACTS

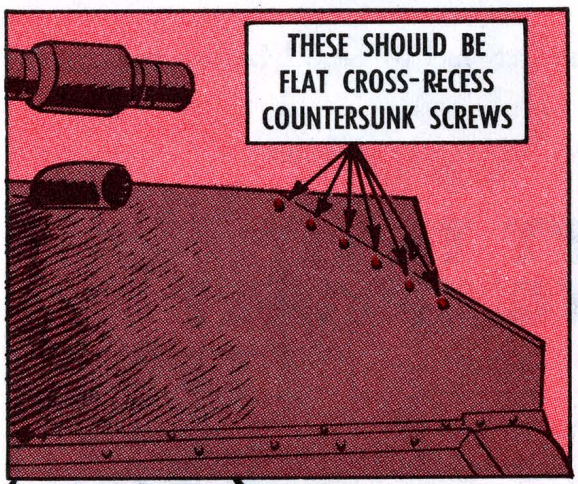
Couple of fast facts about your M108/M109 howitzers . . . .

FACT ONE — You no longer need to break your hump trying to put 180 lb-ft of torque on roadwheel mounting nuts FSN 5310-982-6809.

The Head Shed did some fast figuring on this. Instead of raising the bridge, they lowered the water.

Instead of giving you an extra torque wrench to cart around, they lowered the torque from a flat-out 180 on these nuts to 170-180 lb-ft. So now you can do the job with the torque wrench you already have in your No. 1 or No. 2 Common Tool Set, the trusty FSN 5120-640-6364 — which goes up to 175 lb-ft.





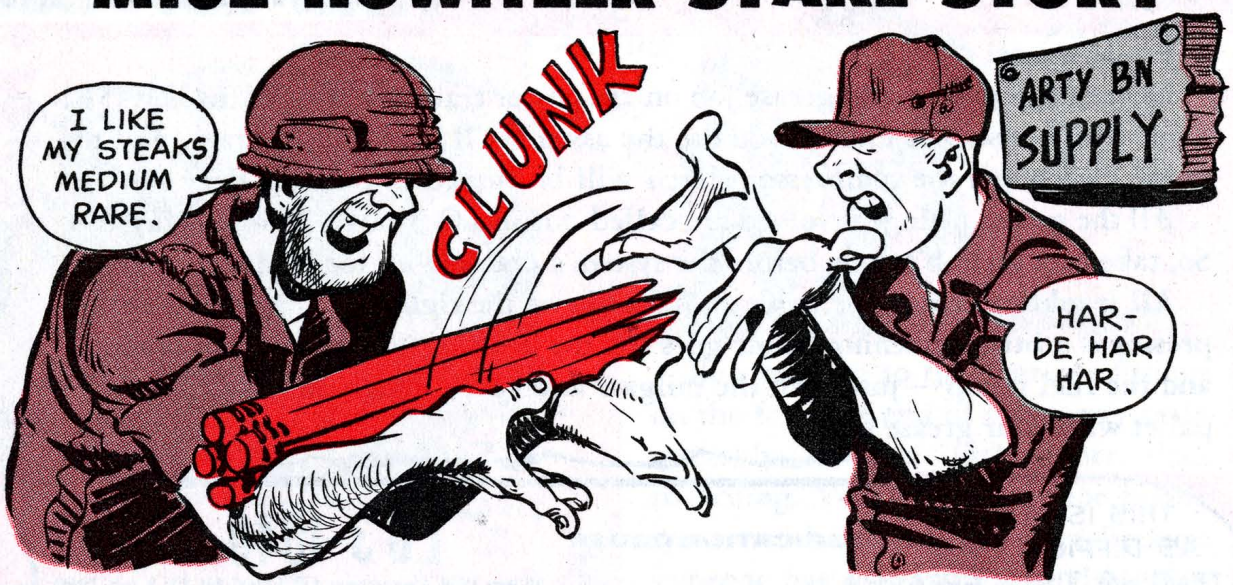
FACT TWO — The 6 countersunk holes in the right, front, side of the hull are getting beat up by the hex-headed screws that get put in by mistake instead of the flat cross-recess countersunk screws that the holes were designed for.

This happens during removal/installation of hull front plate assembly (P/N 10918848) access doors, covers and grilles, when both types of screws are taken out.

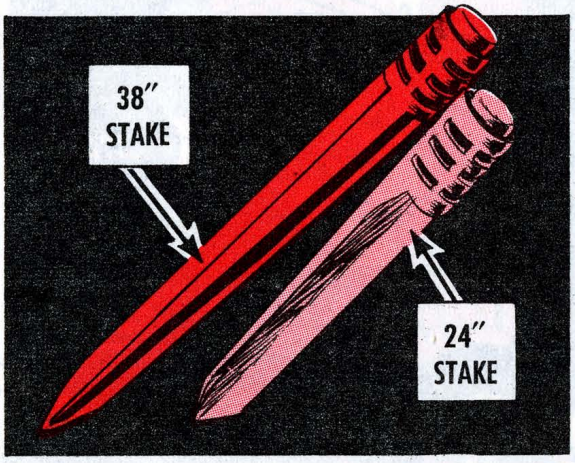
So be careful, huh? If you get the right screws in the right holes you save yourself the cost in time and money of welding and then machining damaged holes. The countersunk screws come under FSN 5305-921-3352.

A guy who damages countersunk holes is just careless.

M102 HOWITZER STAKE STORY



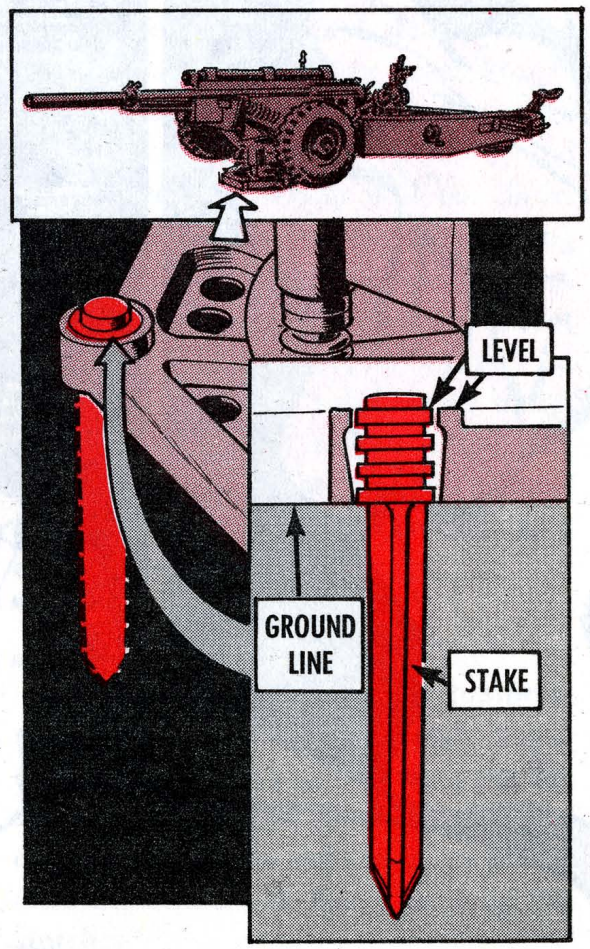
You can now get the extra-long (38-in) stakes in case the normal (24-in) stakes won't hold the platform on your M102 towed howitzer—like in SEA and other places where the ground gets pretty squishy.



Ask for 'em as FSN 1015-658-0794. You need 4.

Traverse the weapon to get access to the stake holes and drive the stakes with the front of the weapon facing toward you. (If you drive 'em with the rear of the weapon facing you there's a chance you might clobber the fire control instruments or the elevating handwheel.)

Drive in each stake so the top ring on the stake is level with the top of the platform—the way it shows in fig 25.1 on page 24 of Ch 3 (May 67) to your TM 9-1015-234-12 (Mar 65).



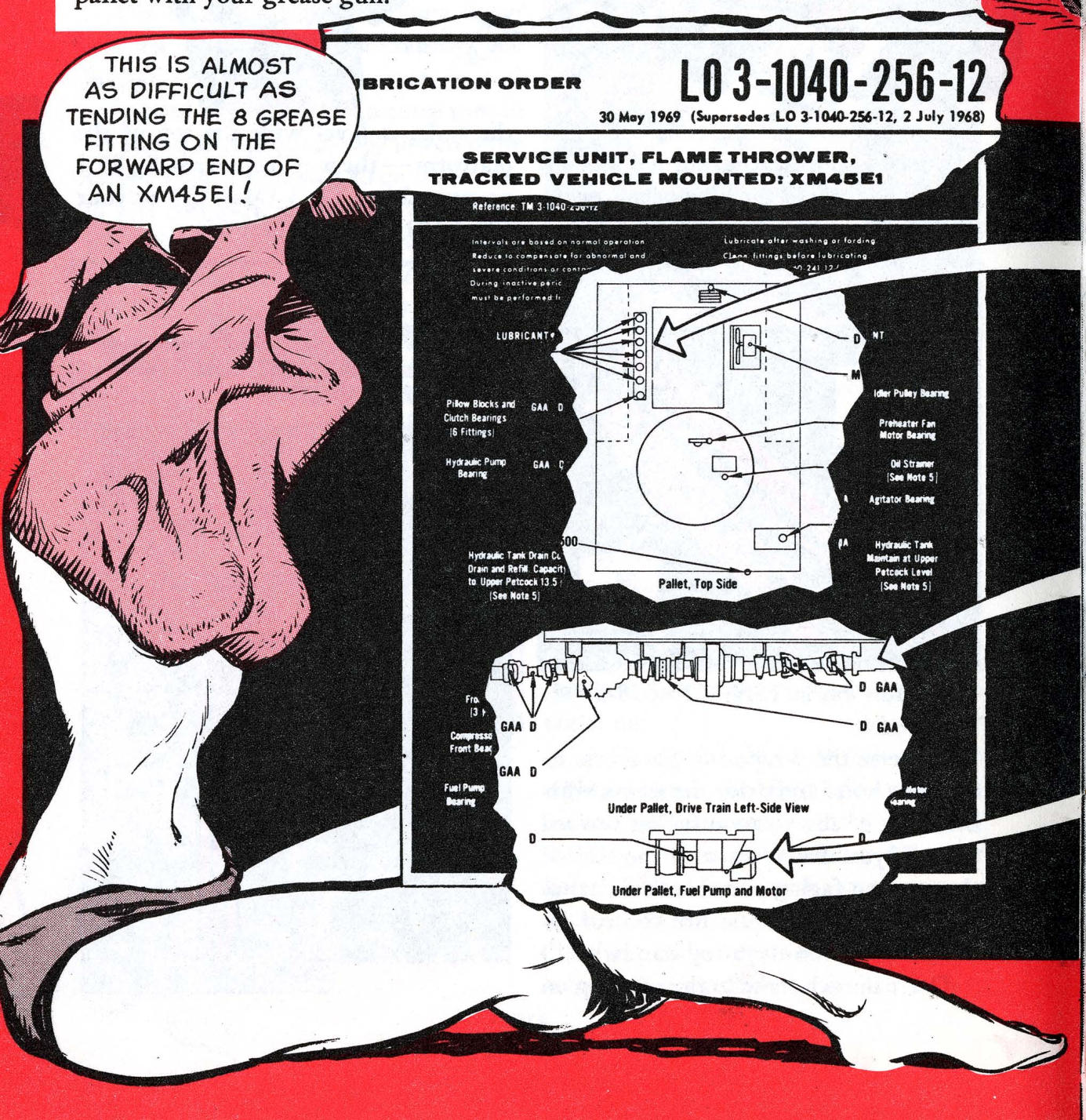
XM45E1 FT

P-u-l-l-e-e-ze!

Never neglect the daily grease job on the power train assembly of the XM45E1 flame-thrower service unit. If you do, the assembly'll heat up like crazy, and the pump clutch and the compressor clutch will be ruined in nothing flat.

All the grease fittings involved are called out in LO 3-1040-256-12 (May 69). So, take care the job's done before the system's cranked-up for its daily chores.

All it takes to reach the bank of 7 fittings on the right, lower side of the compressor is a little stretching. Same goes for the 2 fittings on the hydraulic motor and the fuel pump — just open the tailgate and reach under the rear end of the pallet with your grease gun.



XM45E1 FT SERVICE UNIT

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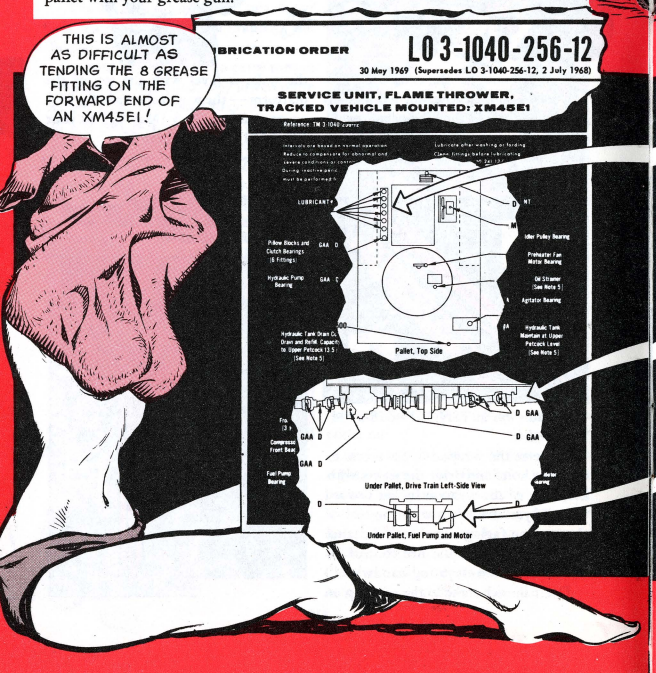
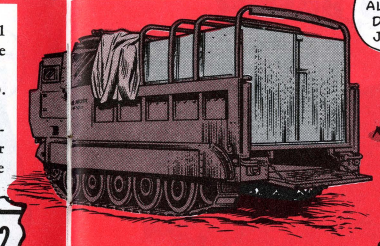




A LITTLE STRETCHING WILL GET THESE!

THESE EIGHT POINTS NEED YOU AND A SKINNY BUDDY... THEY'RE A DAILY MUST! DON'T SKIP 'EM!!

HITTING THESE TWO IS A SNAP!

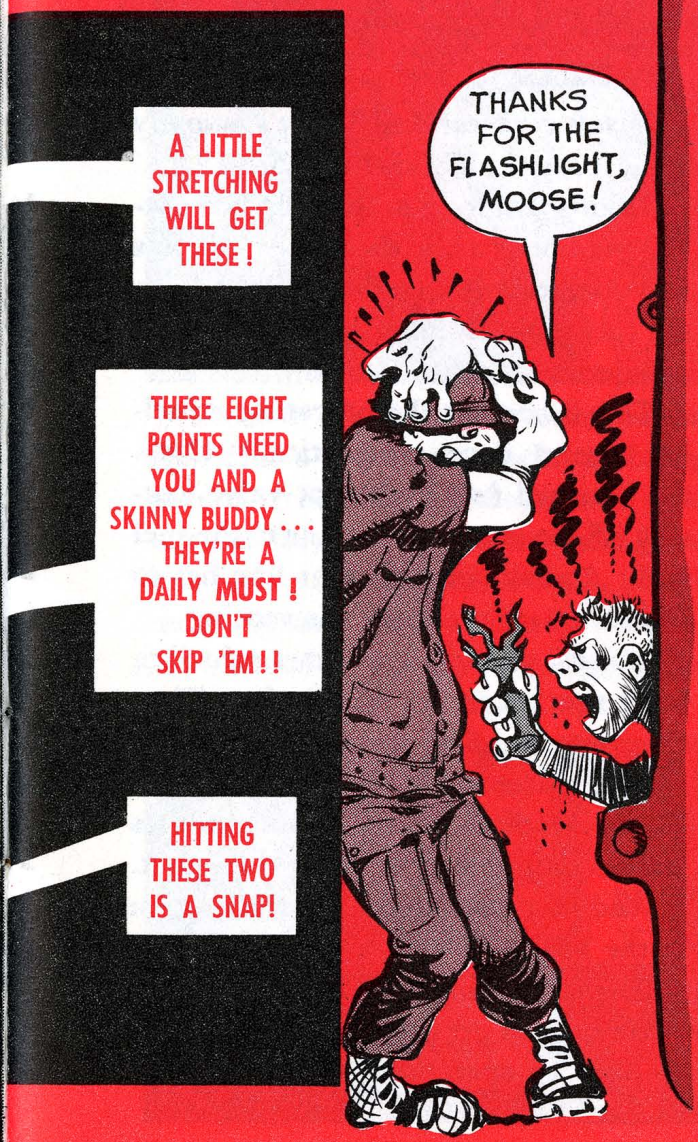
But, tending to the 8 grease fittings on the forward end of the power train assembly takes a little more than stretching. You have to use the buddy system on that part of the chore, because someone has to crawl under the pallet to reach those lube fittings. So, find yourself a jockey-sized buddy, and stand by in case he needs help backing out through the tailgate. In a pinch, of course, he can use the hole under the mixing tank as an escape hatch.

He'll also need an explosion-proof flashlight (FSN 6230-299-3035) and some clean rags to help with the chore. But first make sure he peels off anything that's likely to cause sparks (buckles, watch, ring, etc.), if he thrashes about under the pallet. And, of course, he shouldn't bang any tools under there, either. Fuel fumes, as you know, can collect under the pallet. And, remind him to toss out all the rags when he's done lubing.

CLUTCH LEVERS

Also, always disengage the compressor-clutch lever and the hydraulic-pump clutch lever when you're done using the service unit. If you leave the clutches engaged when the vehicle is operating (and the unit isn't), you'll burn up the clutches.

SERVICE UNIT



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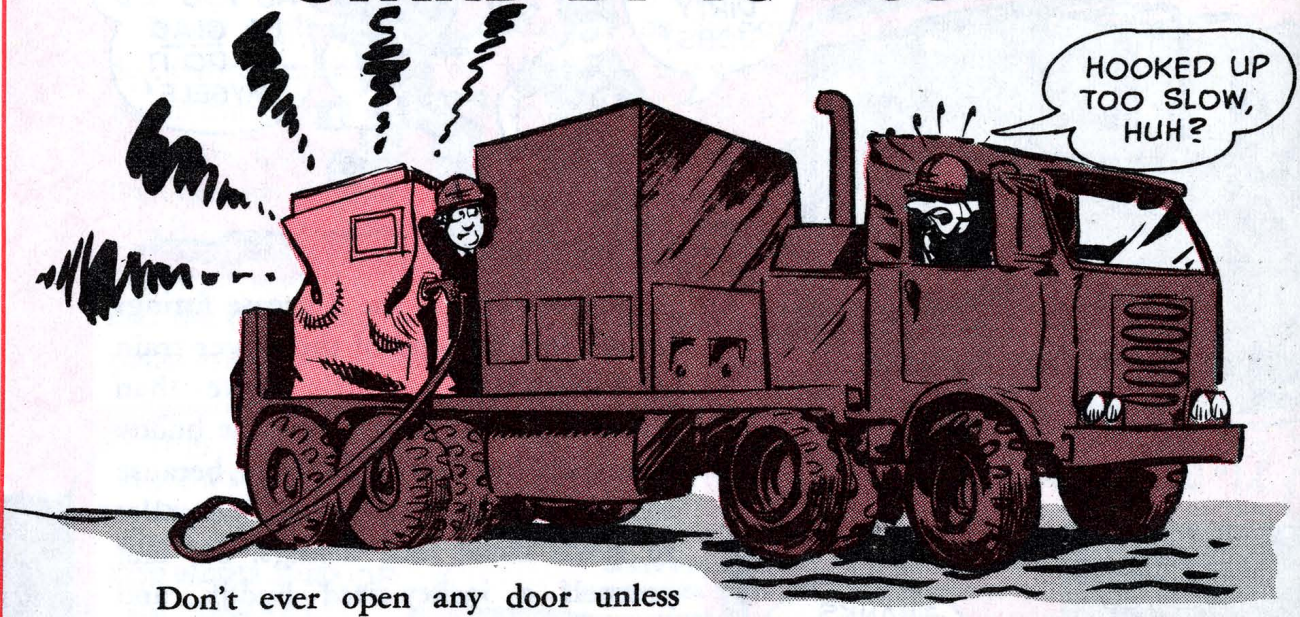
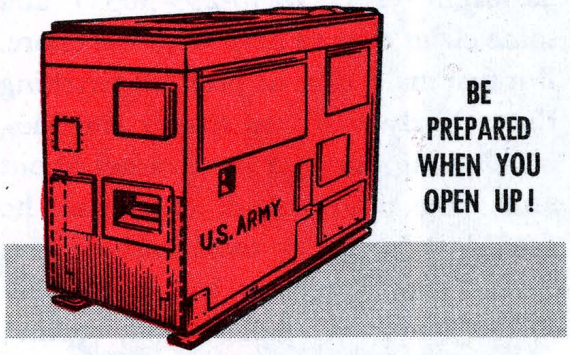
REFUELING PERSHING POWER STATIONS . . .

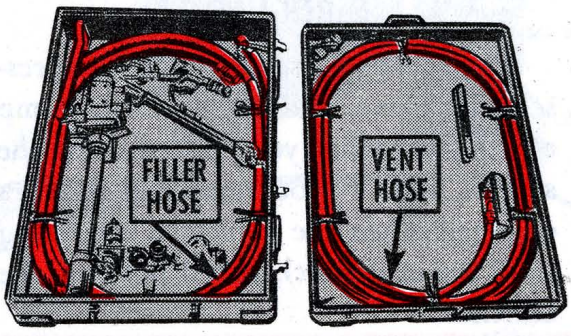
STAND BY TO HOSE IT



Don't ever open any door unless you're ready for what's inside it. Such as when you're preparing to refuel your Pershing's AN/TJQ-3 gas turbine power station through the OPERATING REFUELING SYSTEM DOOR.



Being ready here means having your fuel-filling kit hoses at the ready position.



If you read carefully, that's actually what it says in TM 5-1450-202-12.

Taking too long to hook up the outside vent hose while the power station's still operating drains the pressure from the fuel tank. Eventually, the fuel tank collapses.

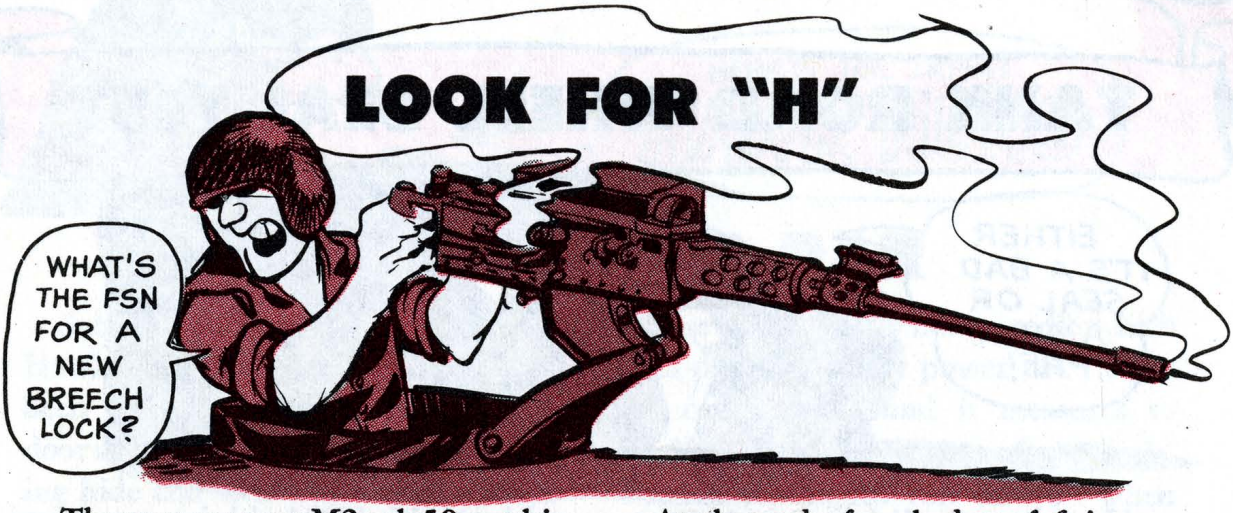
This is because the operating refueling system door automatically closes the attached fuel tank vent valve, cutting off the internal vent line to the fuel tank. And the outside vent line has to be connected to restart this venting.

It's just as bad if you start refueling but forget to connect the vent line. Then the incoming fuel traps the displaced air and fumes inside the unvented tank. The fuel tank balloons until it ruptures and tears up the entire gas turbine unit.

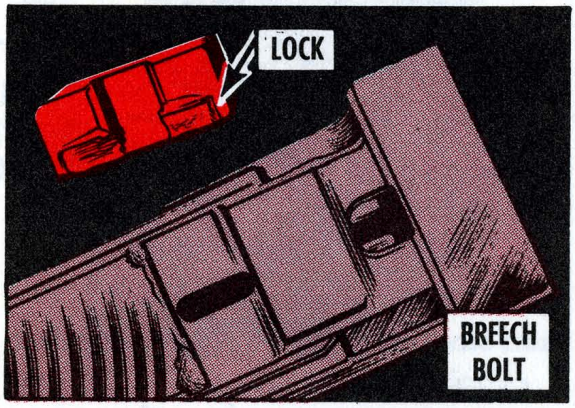
And that's the reason for the caution in the TM.

So please remember your vent hose next time you get ready to open the door for during-operation refueling. 'Preciate it!

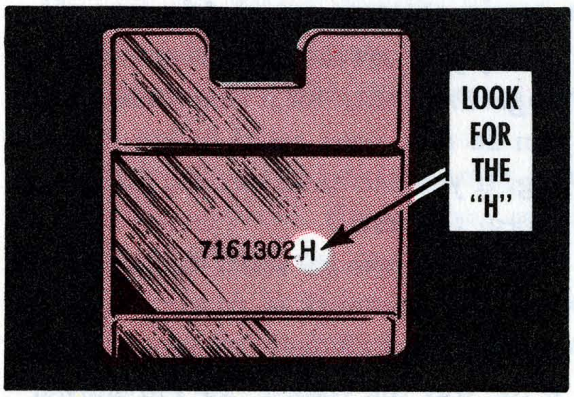
LOOK FOR "H"



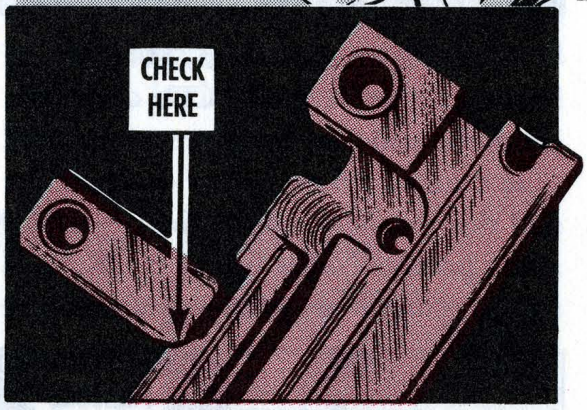
The way so many M2 cal .50 machine guns are chewing up their breech locks and bolts when they jam, you'd think something's wrong.



There is! Those breech locks are too soft. That's why depot stocks are being re-heat treated before they get to you. But the only way to tell the hard from soft replacement breech locks . . . both carry the same FSN . . . is to look for an "H" etched into the block right after PN 7161302.



At the end of each day of firing or when you get done with a firing mission, check the breech lock and breech lock recess in the bolt (if you get a chance) for signs of chipping, burring or cracking.

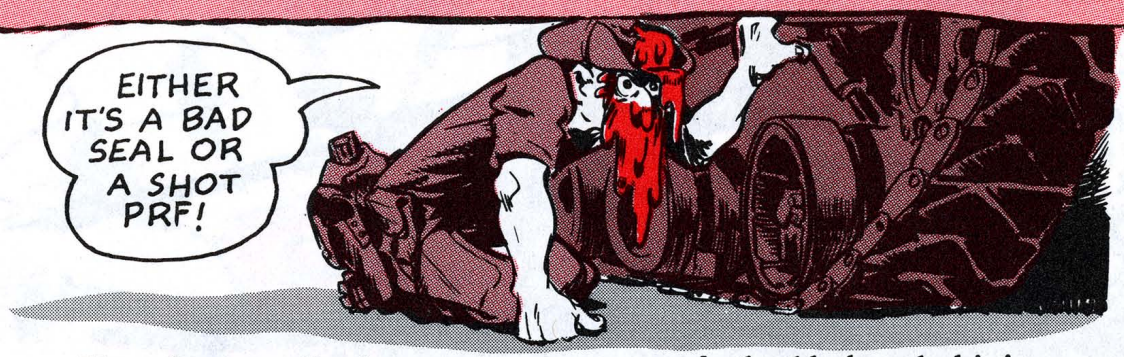


There will be some evidence of wear and that's OK, but chipping, burring or cracking are not.

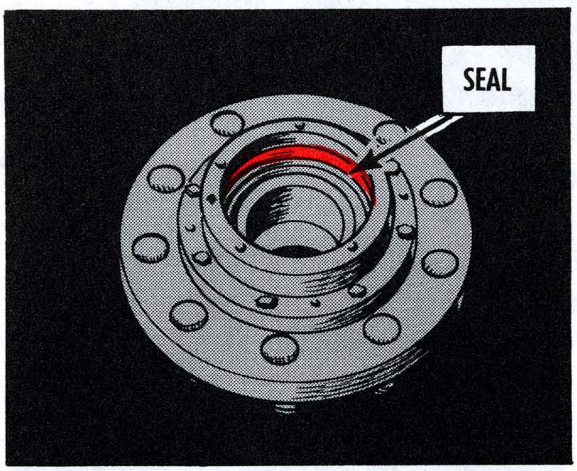
Slight burrs and rough surfaces may be removed by stoning, but be careful not to change the dimensions on the surfaces.

If the breech blocks or bolts are badly damaged they have to be replaced.

TANK ROAD WHEEL SEAL TEST

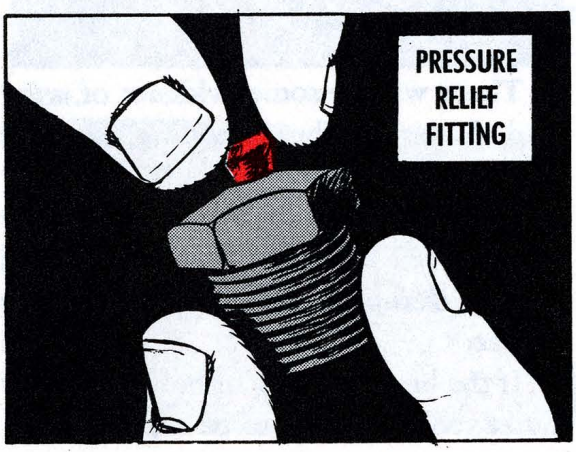


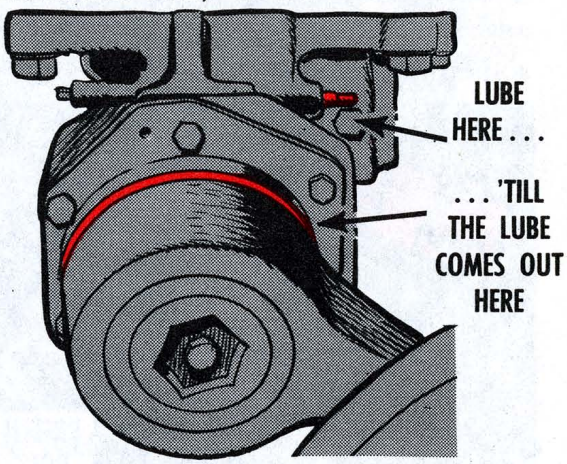
How do you tell when you've got a bad hub seal?



Well, for your M48A3, M48A2C or M60 series tanks, M728 CEV or AVBL, check the seal when you grease the hub.

If a lot of grease comes out past the seal this means the seal is bad — that is if the pressure relief fitting is OK. (If a small amount of grease gets past the road wheel hub seal, this is normal, and the seal is OK.)





Check the LO for your particular track and follow through on all the NOTES, with special attention to those dealing with the suspension system. Be sure you put in enough lube so you can either see or feel it.

To find out if the pressure relief fitting is doing its job, you can replace it with a known good one. Or, an easier way used by most tankers, you can gently pull out the relief vent with your fingers and then let it snap back. If you can do this, your relief fitting is working. If you can't, replace the fitting and repeat the test.

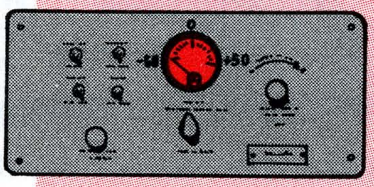
If the pressure relief fitting is OK and the hub seal is passing a lot of grease, the hub seal is bad, so replace it the way the vehicle -20 TM shows.

HERE'S THE LATEST
HAWK NEWS

NO SUBS FOR PAR

Substitute frequency meters for the Hawk's pulse acquisition radar have been sneaking in the back door, side door and wherever . . . but they are playing hide and seek with top efficiency.

Your AN/MPQ-35 needs FSN 6625-720-3518, Weston Model 1521 (Modified). You'll find it on the power control and azimuth and indicator panels.



(MODIFIED) WESTON 1521 METER AT -50

The substitute meters have different scales and markings . . . and some can't even show a full 32V deflection . . . which makes them tough or impossible to work with. And that includes Weston Model 2521 . . . an ammeter, yet!

The correct meter has a needle which rests on "-50" with power off. "0" is top center scale, and it measures to "+50" on the right side of the scale. The needle should rest on "0" when you're transmitting.

MDS TEST

Another sub you wanna watch out for is a diode in the circuitry involved in your MTI check.

If your MDS (minimum discernible signal) is consistently weak on your MTI video check, have support check out the diode.

First choice on diodes is the S2022G, FSN 5961-852-0123.

The only **temporary** substitute you can use is IN3062, FSN 5961-998-2757. It has shortcomings, though, and shouldn't be in the equipment permanently.

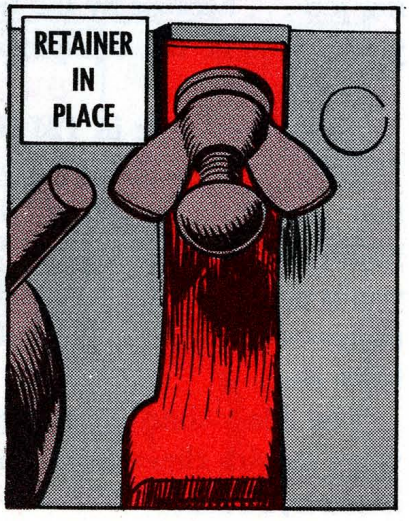
TO THE REAR — MOVE

You know the missile-anchoring plates on your Hawk missile storage pallet?

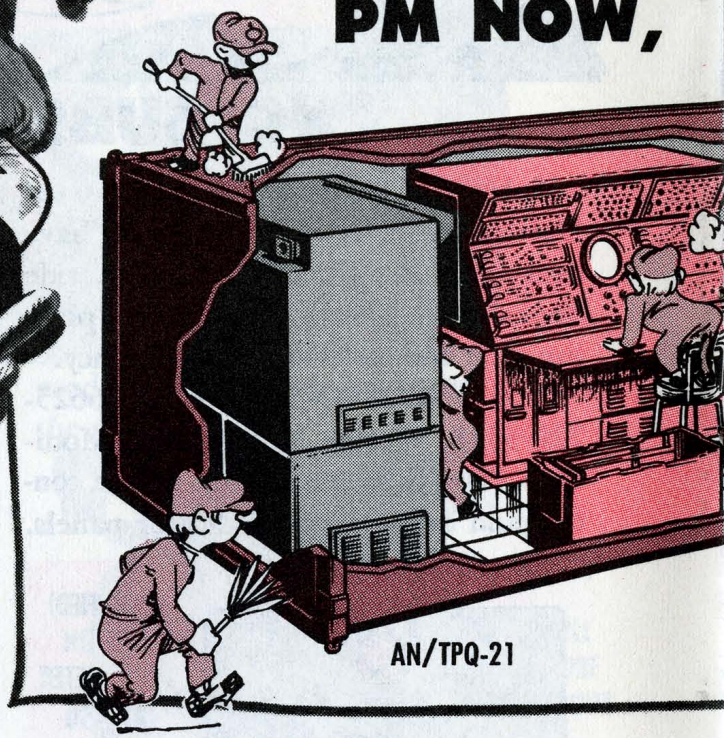
Do you also know that the plates are supposed to be mounted in a certain way?

They sure are — with the recessed slot to the rear of the pallet.

The slot is for the retainer to fit into. But when the plate is reversed, the retainer sticks out so far from the plate that the stud can't take a good bite on the missile. A hard bounce or knock could strip the threads on the tie-down hardware ... and a missile would be on the loose.



PM NOW,



Hawk AN/TPQ-21 simulator stations can do a lot more simulatin', and longer, with a little of the right kind of PM.

Or, like the man said, preventive maintenance is a simulator stimulator.

Like with fuses.

Front panel markings on the components tell you the amperage you need, but what it doesn't have is the blow-time characteristic. That, too, is important.

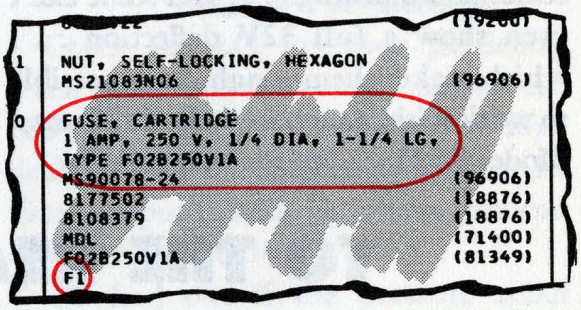
You wouldn't wanna put a fast-blow or normal-blow fuse in to replace a slow-blow . . . because you'll pop fuses regularly. Likewise, you wouldn't put in a slow-blow job to replace a fast acting job . . . because by the time it blew you'd damage the equipment.

So wot to do?

Identify the fuse in TM 9-1430-512-15P (Oct 69). The TM gives you the fuse you need by group (like Group 3300) and "F" number like "F1." Also, you'll get the fuse type number, which indicates voltage, amperage . . . and blow time.

The blow-time characteristic is always the 4th character of the fuse type number, like so:

FO2B125V2A. The letter "B" tells you it's a slow-blow fuse. "A" would be normal, and "C" would be fast blow.



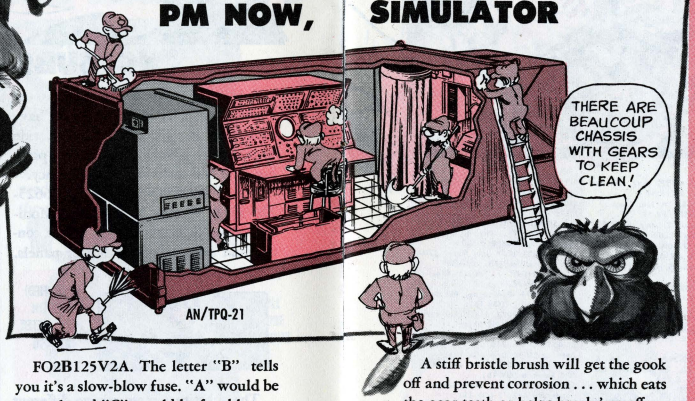
Naturally, "125V" is the voltage, and "2A" is the amperage.

Save yourself and others some headaches. Replace the right fuse. You'll find the fuses identified in pages 4-1 through 4-7 of the -15P.

GEAR TRAIN

Keep the simulator gear trains clean. That, of course, can take a lot of spare time off your hands . . . since 58 of the chassis have gear trains.

PM NOW, SIMULATOR



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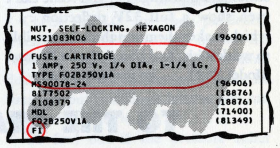

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A stiff bristle brush will get the gook off and prevent corrosion . . . which eats the gear teeth or helps break 'em off.

Naturally, without teeth, the gears bind, burn up motors, and create other kinds of unwelcome delights. Keep dirt out by keeping the drawers closed.

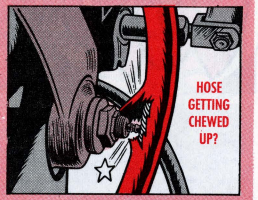
CONNECTORS

Screwdown connectors need only be finger tight. Adding muscle will break 'em or cause 'em to seize.

And, line up the threads before you start screwing it up. Then, snug it up evenly on each side.

You save bent pins, cracked insulators, damaged wiring—aspirin.

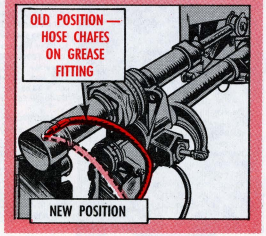
TIME FOR A CHANGE



The hydraulic hose elbow on the cap for the gross end of the extension cylinder for your Hawk XM501E3 loader-transporter oughta be near 4 o'clock.

If the elbow is sitting at, say 2 o'clock, you lose some of the slack in the hose. So . . . with the superstructure at full elevation, the hose gets hung up on the main support pivot lube fitting as you move the extension cylinder. And that fitting sure can play hob with the hose.

Your support unit can move the cap in no time.



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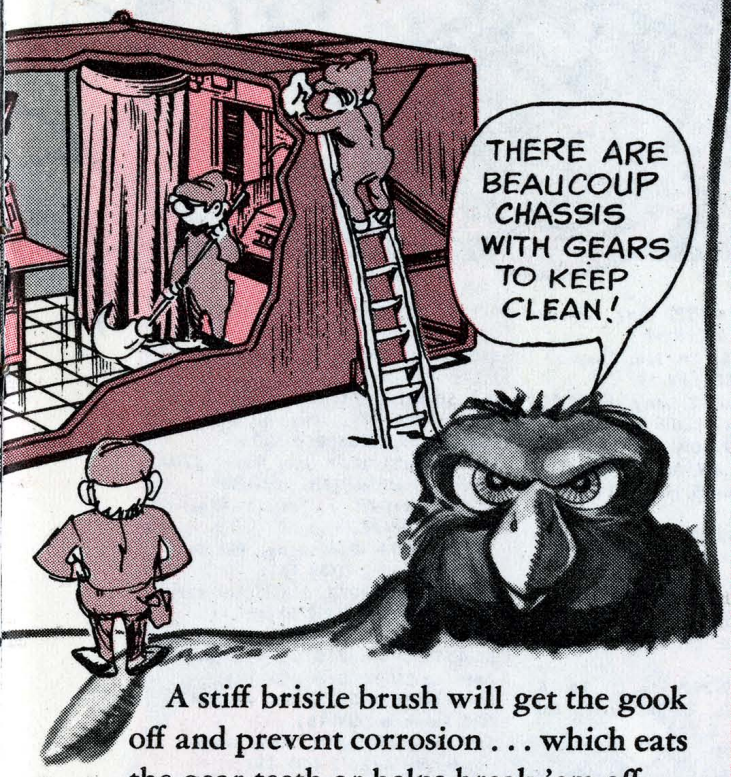

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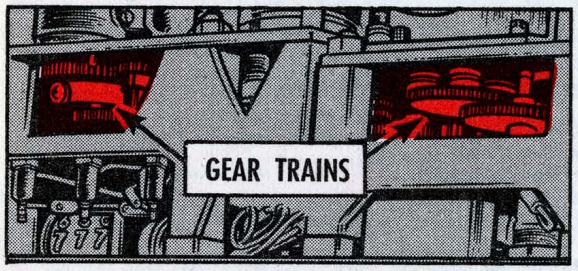

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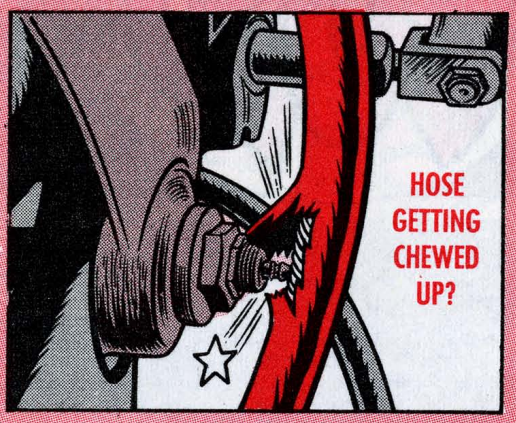

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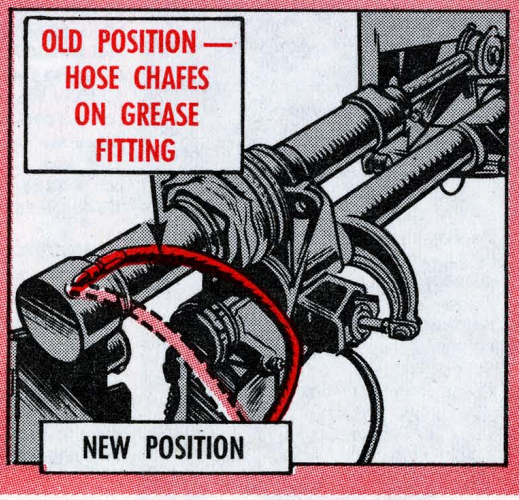
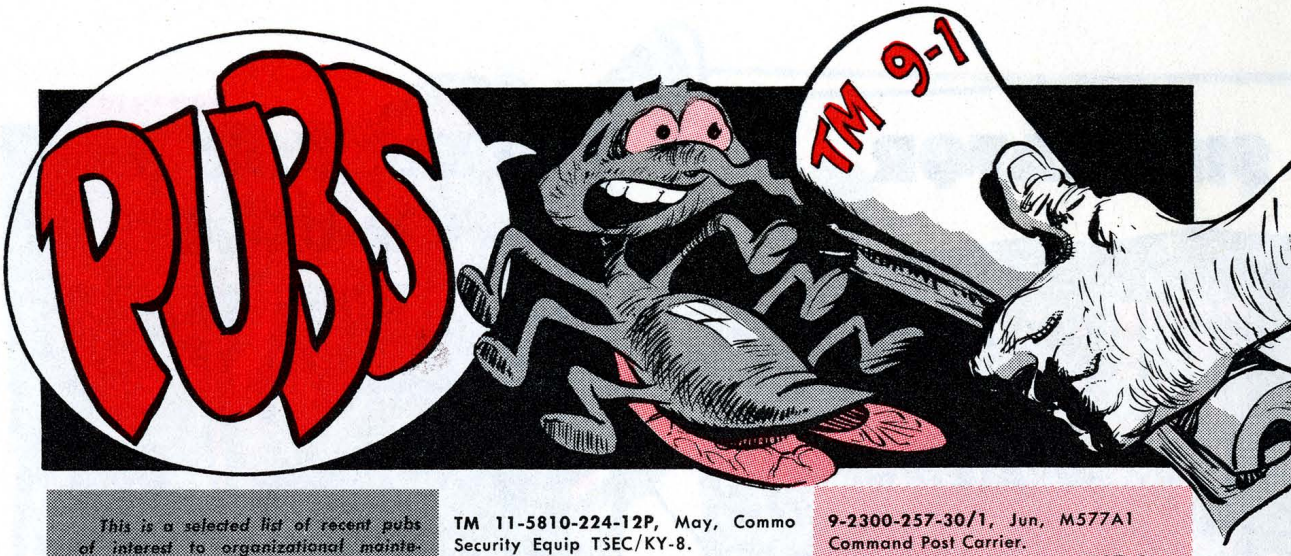
If the elbow is sitting at, say 2 o'clock, you lose some of the slack in the hose. So . . . with the superstructure at full elevation, the hose gets hung up on the main support pivot lube fitting as you move the extension cylinder. And that fitting sure can play hob with the hose.

Your support unit can move the cap in no time.





This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 (Jun 69), and Ch 5 (Apr 70), TM's, TB's, etc.; DA Pam 310-6 (Jul 70), SC's and SM's; DA Pam 310-7 (Mar 70), MWO's and DA Pam 310-9 (May 69), COMSEC Pubs.

TECHNICAL MANUALS

TM 5-2330-207-25P, C2, Jul, Operator Semitrailer Low Bed M172.

TM 5-3431-208-20P, May, Welding Equip ARC Inert Gas.

TM 5-3895-219-20P, May, Mixers Concrete.

TM 5-3895-271-12, May, Roller Tandem 3 Roll 13-18T.

TM 5-4110-230-14, Apr, Refrig Unit 3000 BTU Electric & GED.

TM 5-4310-211-20P, Jun, Air Compres High Pressure 80 CFM.

TM 5-6115-307-20P, Jun, Gen Set DED 45 KW 60 HZ.

TM 5-6115-329-25P, Mar, Gen GED 5 KW 60 & 400 Cycle.

TM 5-7430-212-23P, May, Printing and Equip Repro.

TM 9-1005-224-10, C2, Jun, 7.62-MM M60 & Mount Tripod M122.

TM 9-1005-231-25, C2, Jul, Caliber .50 M85.

TM 9-1010-200-35P, C1, Jun, M42, M42A1 40-MM (Twin) SP Gun.

TM 9-2300-378-20P/2 Vol I & Vol II, Aug 69, (U) M60A1, M48A3, M60A1E2 Tanks & M728 CEV.

TM 9-2320-260-10, Apr, G908-Series 5-ton Truck—Chassis M809, M809A1, M810, M811, M811A1, M811A2, M812, M812A1; Cargo M813, M813A1, M814; Bolster M815; Wrecker M816; Dump M817; Tractor M818; Tractor-Wrecker M819; Van M820, M820A1, M820A2; Stake Bridge Transporting M821.

TM 9-2350-242-20P, C2, Jun, M88 Recovery Veh.

TM 9-4935-587-12, C3, May Chaparral.

TM 9-4935-587-20P, Jun, Chaparral.

TM 10-3930-223-10, C6, Jun, Operator Trucks Forklift GED Rough Terrain.

TM 10-3930-619-20P, Jun, Truck Forklift GED 2000 lb.

TM 11-5810-221-45/7, Jun, Commo Security Equip TSEC/KW-7.

TM 11-5810-224-12P, May, Commo Security Equip TSEC/KY-8.

TM 11-5810-244-12P, Jun, Commo Security Equip TSEC/KY-28.

TM 11-5815-334-12, May, AN/GRC-122 AN/GRC-142 Radio Sets.

TM 11-5821-277-20P, Jun, Radio Sets AN/ARC-134 & AN/ARC-134A.

TM 11-5841-268-25, Nov, All Fixed and Rotor Wing.

TM 11-5995-202-15, May, Transmission Cable Kits MK-456/GRC & MK-456A/GRC.

M 11-6615-204-20P, May, OV-1A-1B-1C, U-8D, RU-8D, U-8E, U-8F, CH-34A, CH-34C, CH-37B, CH-47A, UH-1B, UH-1D.

TM 11-6625-409-20P, Jun, OV-1A-1B-1C, U-1A-6A-8D, RU-8D, U-8F, CH-21C-34A-34C-37B-47A, UH-A-1B-19C-19D.

TM 11-6720-243-15, Jun, Camera Set Still Picture KS-99B.

LUBRICATION ORDERS

LO 5-3805-210-12-1 & 2, May, Earth Moving Equip Graders Huber Warco 4D.

LO 5-3810-232-12, May, Crane Shovel Wheel Mtd R/T AM H&D 2380.

LO 5-3825-223-12, May, Distributors: Water 1000 Gal Trlr Mtd.

LO 5-3895-330-12, Apr, Spreaders: Aggregate.

LO 5-4310-250-12, May, Air Compres 250 CFM.

LO 5-4310-280-12-1 & 2, May, Air Compres 600 CFM.

LO 5-5274, May, Gen DED Cummins Mdl NHRSGA 601-150.

LO 5-6115-455-12, May, Gen DED 200 KW Waukesha F1905.

LO 9-1090-202-12, May, Armament Subsystem Helicopter (7.62MM MG 2.75 Inch Rocket Launcher) M21.

LO 9-2320-242-12, Mar, Articulated 1¼-ton M561 Truck M792 Ambulance.

MODIFICATION WORK ORDERS

5-4600-218-20/1, Jun, Water Purification Unit Trlr Mtd Lifting Kit.

9-1005-257-30/1, Jun, Armament POD XM18E1.

9-1090-203-30/1, Jul, Armament Subsystem XM28, XM28E1 & Analyzer Test Sets.

9-1240-258-40/1, Jun, Fire Control M17A1 & M17C.

9-2300-257-30/1, Jun, M577A1 Command Post Carrier.

9-2300-391-40, C1, Jun, M107 Gun M110 Howitzer M578 Recovery Veh.

9-2350-230-30/1, Jul, M551.

9-4931-294-50/1, Jun, Microwave Receiver PRD Mod 915-S10.

11-1520-221-30/1, Jun, Model 570A Sensor Amplifier Unit (AH-1G).

55-1500-210-20/1, Jun, CH-47A, CH-47B, CH47C.

55-1510-204-30/6, May, Ref Set AN/ASN-76( ) (OV-1B).

55-1510-204-30/7, Jun, Tacan Navigational Set AN/ARN-52(V) (OV-1B).

55-1510-204-30/10, Jun, Coupler Antenna CU-1658/A (OV-1B).

55-1510-204-30/11, Jun, AS-2042/ARC Antenna (OV-1B).

55-1510-204-30/12, May, Transponder Set APX-72 (OV-1B).

55-1510-204-30/30, Jun, OV-1A B C.

55-1510-204-40/5, Jun, Transmitting Set Radar Data AN/AKT-18 (OV-1B).

55-1510-209-20/8, Jul, U-21.

55-1520-209-30/90, Jun, CH-47A.

55-1520-214-30/35, Jun, OH-6A.

55-2840-234-30/1, Jul, Fireshield Assem on T-55-L-11 Eng (CH-47C).

MISCELLANEOUS

AR 750-19, C1, Jul, Maint Float.

DA Pam 700-2, C1, Com Sup & Maint Hbk.

SB 740-2350-98-102, May, M108/M109 Howitzer.

SB 740-6675-97-E24, Jun, Plotting Instrument Set.

SC 3610-97-CL-E05, Jun, Repro Set Typographic.

SC 5180-97-CL-E01, Apr, Erection Outfit High Bolted Storage Tanks.

SC 5180-97-CL-E44, May, Tool Kit Welded Pipeline Construction: 4 6 & 8 In Pipe.

SC 5420-97-CL-E23, Jun, Bridge Conversion Set Fixed Bridge.

TB 11-499-91, Jul, Ionospheric Predictions For October 1970.

TB 11-6135-200-25/1, Jun, Nike-Herc.

ESC's

TM 9-2320-218-ESC, May, M151 Series ¼-ton truck.

TM 9-2350-217-ESC, C1, Jun, 155MM, M108/M109 Howitzers.

TM 9-2350-230-ESC, C1, May, M551.

TM 9-2350-244-ESC, Mar, Command & Recon Carrier M114/M114A1.

JOE'S DOPE
HOW AIR FILTERS COME CLEAN
Early in the century, Hobart J. Gasp . . . a great inventor of those times, came upon a major mechanical truth . . . .
PUFF
WHEEZE
PUFF
PUFF
PUF
AIR can be used to cool things
. . . he said
KORF
KOFF
COFF
KAWF
... and such air must be clean!
. . . he added
COFF
GASP
GREAT IDEA, HOBART! I'LL RAISE YOUR SALARY.
PLEASE TURN THE PAGE AT ONCE

So Hobart Gasp promptly invented the AIR FILTER . . . which cleansed the air coming into a body of machinery

THE AIR FILTER ELEMENT

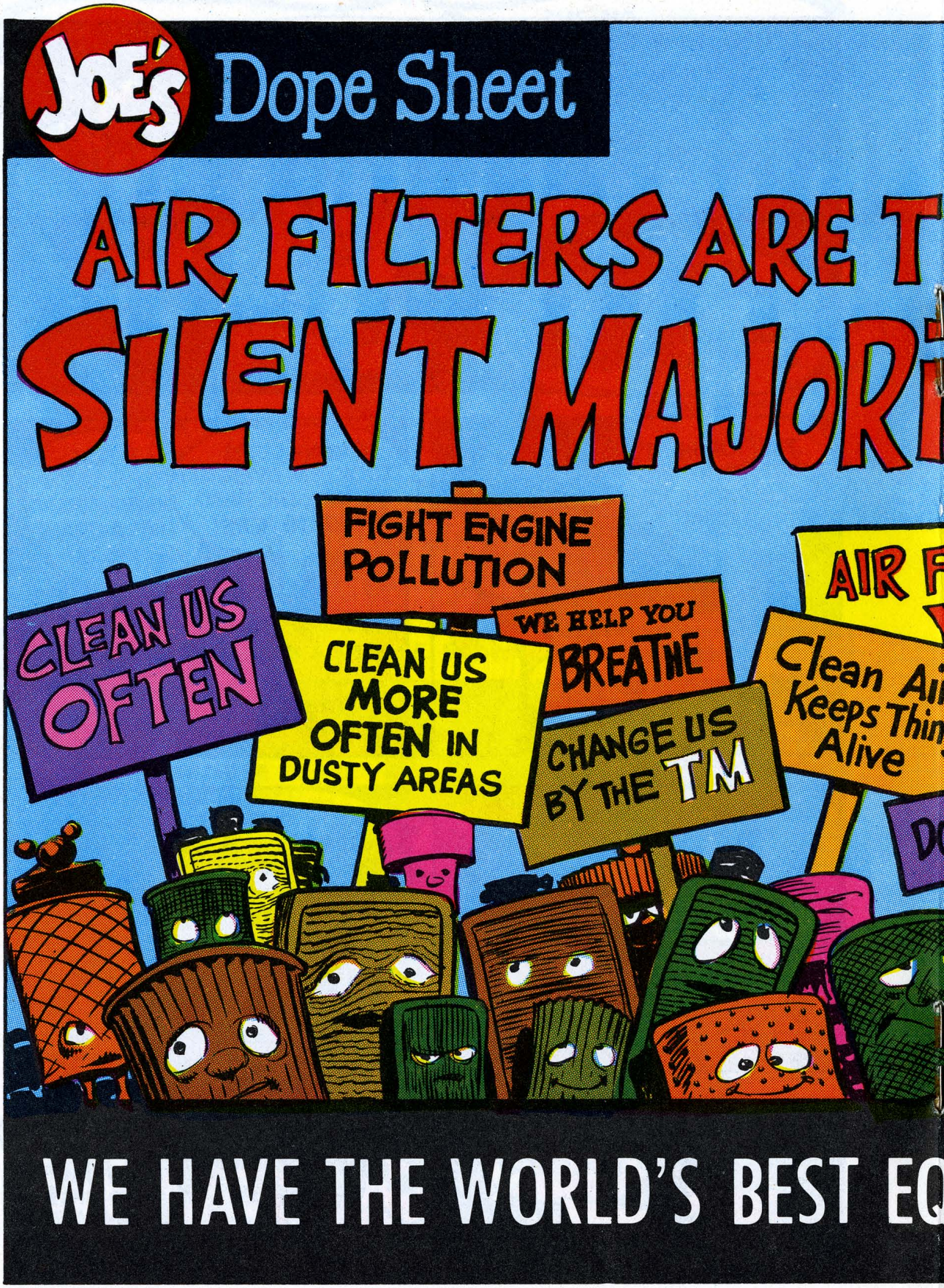
WHEN MODERN ELECTRONIC EQUIPMENT CAME ALONG

BUT . . .

despite his genius, he overlooked one thing . . . HUMAN FRAILTY which leads to . . .

WHICH BRINGS US TO FIREBASE BROWN . . . UPCOUNTRY SOMEWHERE

ME? MAN, I'VE BEEN BUSTIN' MAH HUMP!
WE BEEN HAVIN' MORE DOWN-TIME ON THEM TIPSY 33's THAN EVER! YOU BEEN SHAMMIN' ON THE JOB, HOOP??
THE TOPSHIRT'S GONNA BLOW HIS TUBES WHEN HE FINDS OUT!
BUT... BUT...
C'MON – LET'S LOOK 'EM OVER BEFORE THE HEAD MAN GETS HERE!
...I TELL YA, I BEEN OVER 'EM LIKE A BRAIN SURGEON!
HEY, DUFUS! NO WONDER THEY'RE ON THE FRITZ! CLEAR AWAY THEM BAGS! GIVE 'EM SOME AIR!
LOOK AT THIS FILTER! LOOKS LIKE YOU BEEN STRAININ' YER HAM 'N' LIMA BEANS THRU IT!
POST THAT PS PIN-UP AND LISSEN!
...FILTERS LIKE THIS COULD BLOW THE OLD TIPSY AWAY!



IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULL

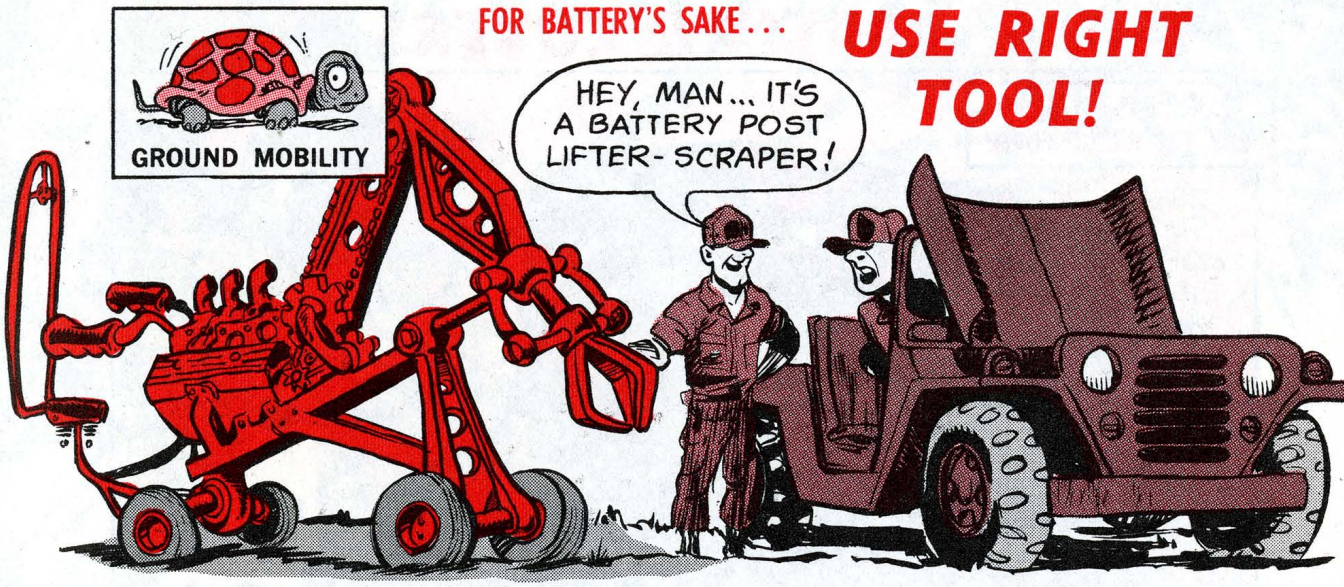
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

LETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

DO YOU KNOW WHY SO MUCH ELECTRONIC GEAR HAS AIR FILTERS?
NICOTINE AND TARS,???
NO! BECAUSE IF DIRT BUILDS UP INSIDE, THE EQUIPMENT RUNS TOO HOT...
LIKE AIR COOLS THE TUBES
IF THE FILTER IS DIRTY OR NOT WORKIN', DIRT 'N' DUST BUILD UP INSIDE.
THE TUBE GETS HOTTER AND
POW
WHAT THE...!
EVEN IN EQUIPMENT WITHOUT FILTERS THE DUCTS GOTTA BE KEPT CLEAR AND THE VENTS UNBLOCKED SO COOLING AIR CAN GET IN!

THE ANSWER TO OUR PROBLEM, HOOP, IS MAINTENANCE-BY-THE-BOOK! CLEANING OR REPLACING FILTERS PERIODICALLY...
YEAH, AND "AS THE ENVIRONMENT DICTATES"— AND THIS ENVIRONMENT SURE DOES DICTATE!— BUT, WHAT ABOUT CLEANING, SARGE?
WELL, TAKE YOUR WIRE OR FIBER MESH AIR FILTER, F'RINSTANCE—
HOT OR LUKEWARM WATER
WITH A STRONG SOAPY SOLUTION
AFTERWARDS RINSE IT IN CLEAN, CLEAR WATER
AND...
ALLOW TO AIR DRY
OR USE A LOW PRESSURE AIR HOSE
. . . BUT NOT TOO CLOSE
THEN SPRAY OR DIP INTO A LIGHT OIL
OIL LIGHT WEIGHT
MAKE SURE ALL EXCESS OIL HAS DRIPPED AWAY
OR THE BLOWER WILL SUCK IT INTO THE EQUIPMENT
WOW, SARGE— A DIRTY FILTER IS LIKE TRYIN' TO BREATHE THROUGH A MATTRESS.

BETTER GET THOSE FILTERS CLEAN. THERE'S HOSTILES IN THE GRASS ALL AROUND US!
I'LL DO IT IN THE MORNIN'.
THAT NIGHT
WHO'S THAT?
I BROUGHT A CIVILIAN TECHNICIAN DOWN TO HELP SOLVE OUR FILTER PROBLEM ... HE'S HOBART GASP, THE FAMOUS FILTER EXPERT...
I'M HOBART GASP... HEH.
PLEASE TO MEETCHA...
HIT THE DIRT! WE'RE GETTIN' FAHR!
BANG
WE'VE BEEN INFILTRATED! THE RADAR DIDN'T DETECT 'EM.
AFTER 70 YEARS IN THE AIR FILTER BUSINESS... I'M BEGINNING TO WONDER IF IT AIN'T PERHAPS THE OPERATOR THAT NEEDS IMPROVEMENT...



You wouldn't use a hammer to cut a board, would you? Heck no—that's just plain dumb!

Well, even worse is using a crescent wrench, screw driver or some other such thing to pry the clamp off a battery post. You stand a good chance of busting a hole in the top of your battery. Then that battery is shot! Done for! Junk!

There's a special tool for this job—Lifter-scraper, battery terminal, FSN 5120-293-1039—in your No. 1 Common Tool Kit.

Use it!

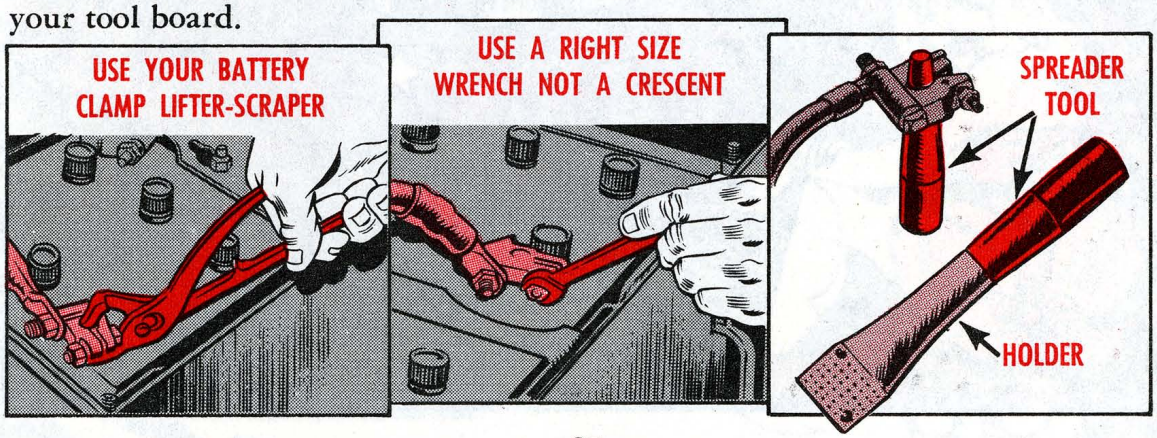
And never use that big ol' crescent wrench for loosening the battery clamp bolt. It can slip off and knock a hole in your battery top quicker'n you can spit.

Always use an open-end or box wrench of just the right size.

No pounding when you're puttin' the clamp back on the post. You'll drive the post right down into the battery—and really mess things up inside.

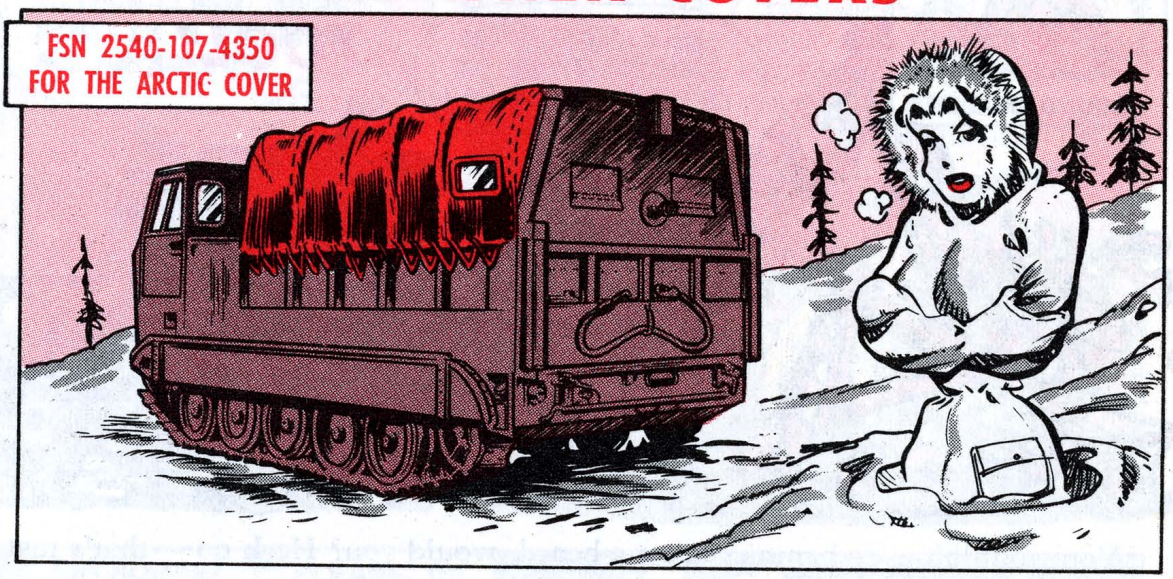
The clamp should drop right down over the post with no sweat. If it won't, open it up so it will.

A handy clamp-spreader can be made from 1-in dia bar stock. Your support can turn this tapered tool on a lathe in a coupla minutes. You can make a holder for this tool yourself from a piece of pipe—crimped at one end and fastened to your tool board.



M548 CARGO CARRIER . . .

WEATHER COVERS

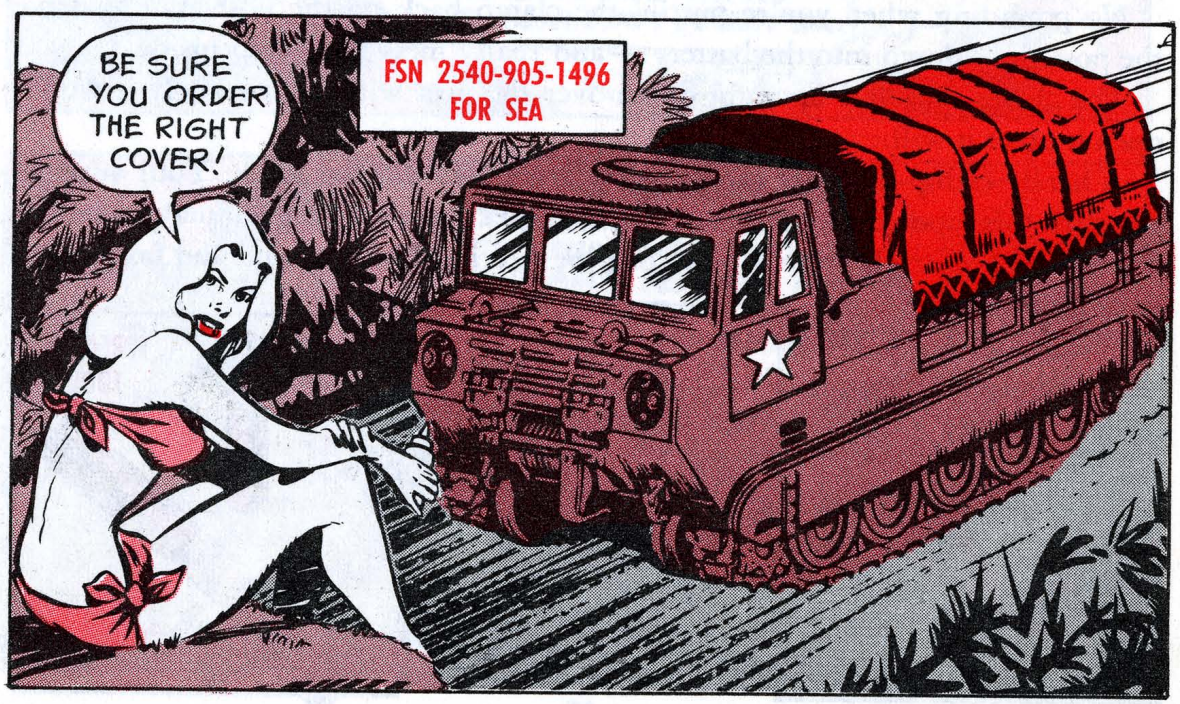


Covers for your cargo body are listed in TM 9-2320-247-20P (May 69), but before you order one for your track-wagon make certain you're placing a requirement for the right cover.

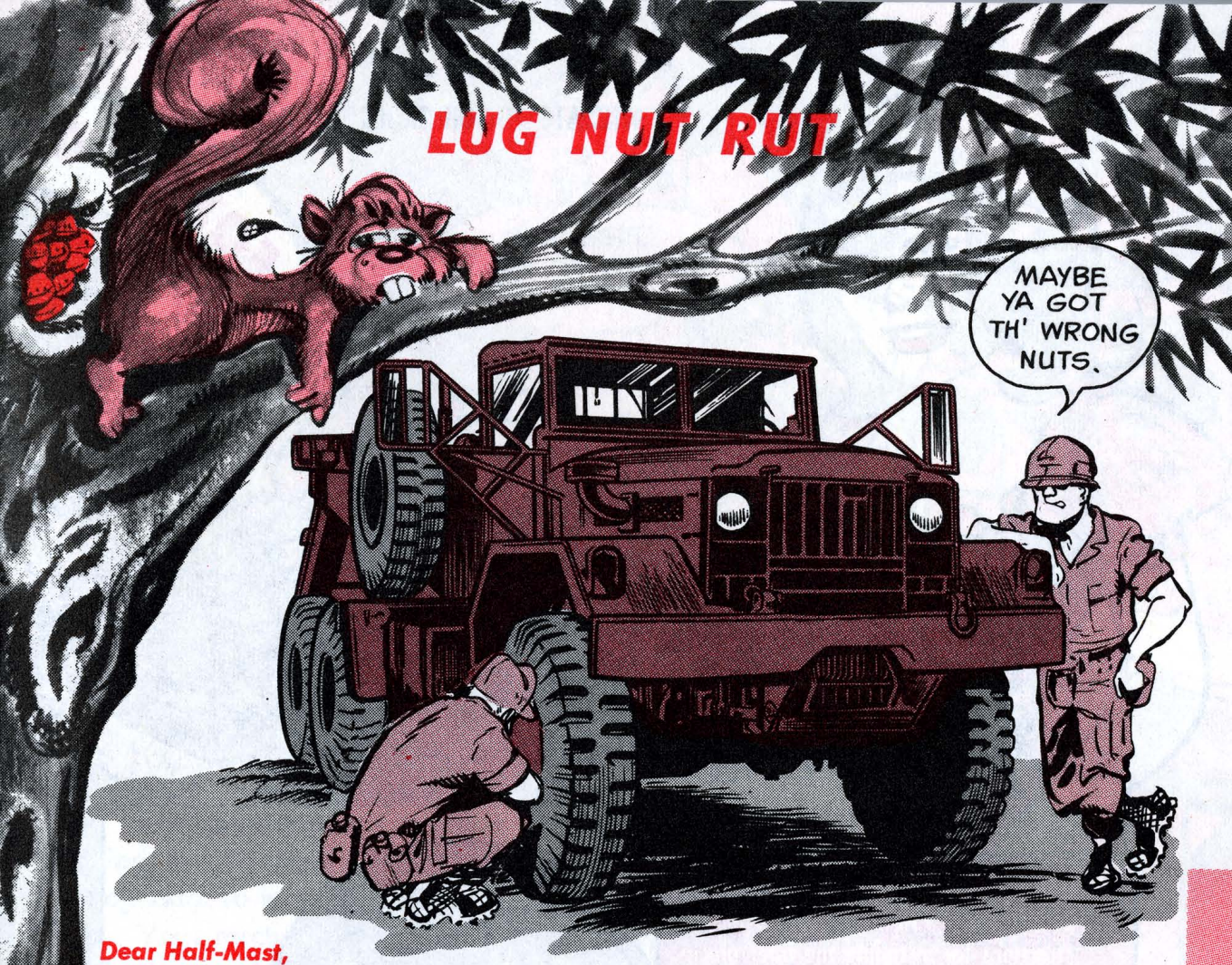
FSN 2540-107-4350 listed on page 3-173 is a cold-weather cover for outfits operating in temperature ranges from -25° F to -65° F. The authorization to have one is outlined in SB 9-16.

FSN 2540-905-1496 listed on page 3-139 is a cover used in warm climes—even places like SEA.

If you've submitted a DA Form 2765 for a cover, scan your "document register" and see if you're asking for the one you actually need.



LUG NUT RUT



Dear Half-Mast,

I can't win for losin' with front wheel lug nuts of the M123A1C 10-ton tractor. When I tighten up, the nuts dig into the wheel assembly. Then I can't put a wrench on 'em to take 'em off. Have you got a tip here?

SP4 R. G.

Dear Specialist R. G.,

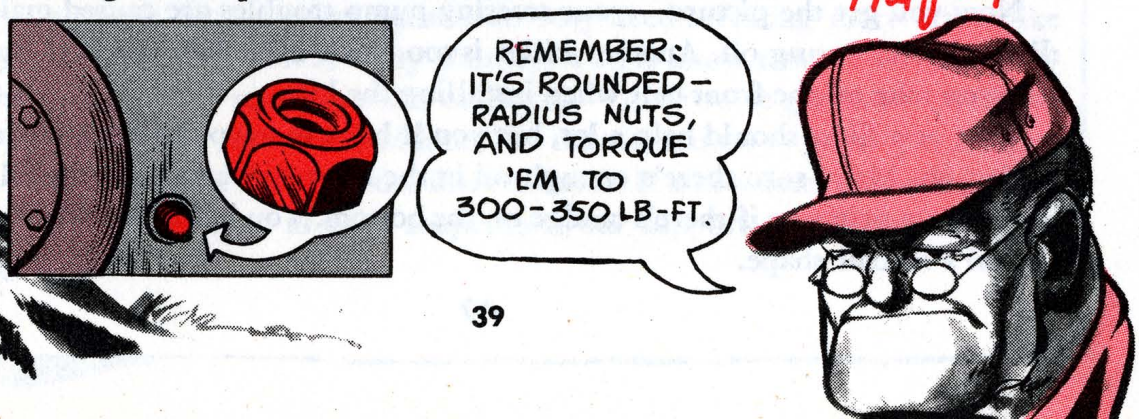
Looks like you need a couple of 'em.

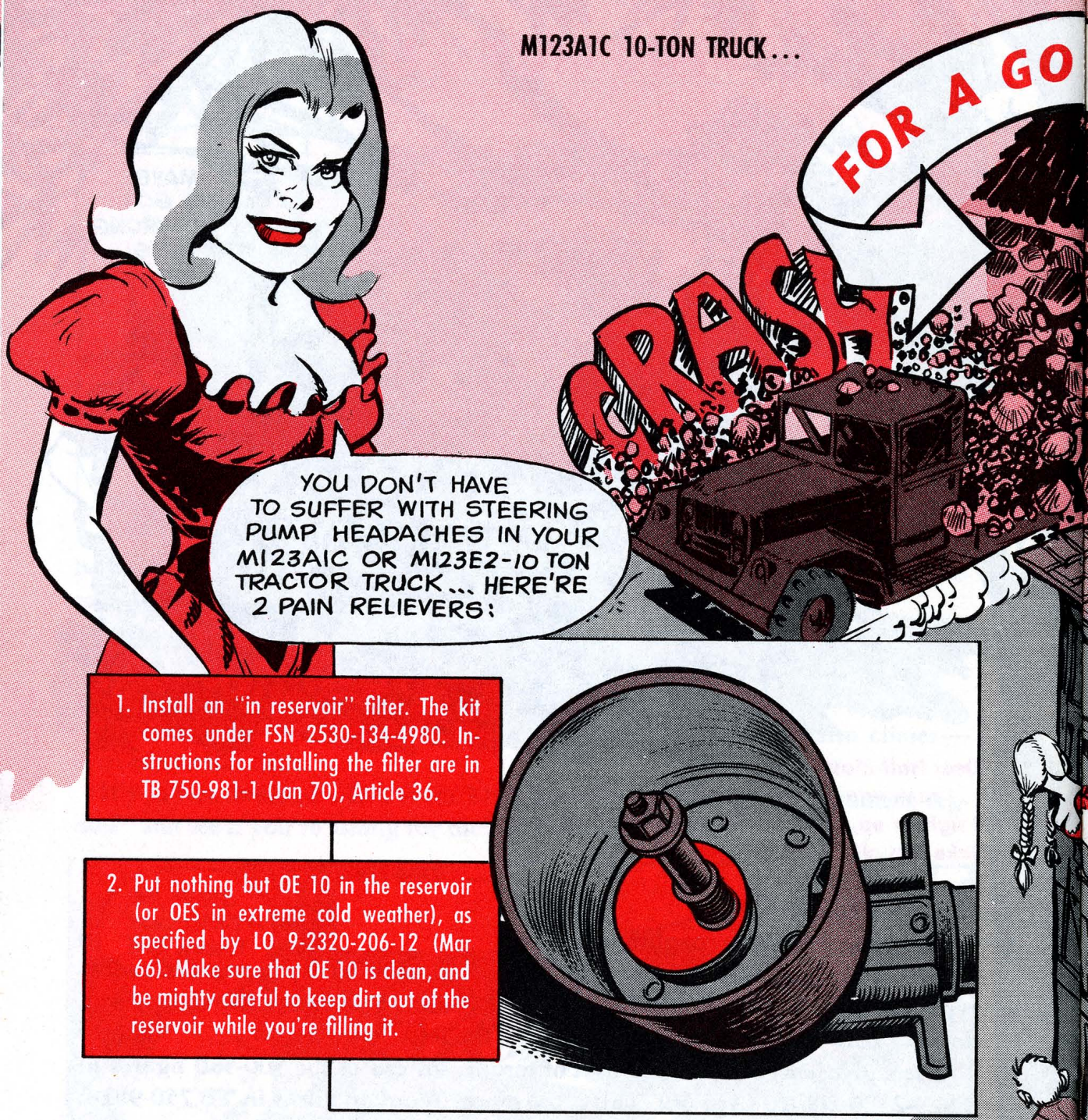
First, make sure you've got the right nuts. You gotta have the rounded radius types. You get 'em with . . . FSN 5310-053-7803 (537803) for the right wheel and . . . FSN 5310-053-7804 (537804) for the left.

Then, give 'em only 300-350 lb-ft of torque, instead of the 500-550 figures in TM 9-2320-206-20 (Apr 66). This is too much. Word on this is in TB 750-981-2 (Apr 70), Article 3-15.

The new lug nut torque is for all wheels — front and rear.

Half-Mast





A DIRTY PICTURE

Now you get the picture—your steering pump troubles are caused mainly by **dirty** oil and **wrong** oil. Another killer is too much drive belt pressure, so make sure you take off the front belt when installing the kit.

That new filter should help a lot, but you'll have to keep the filter in shape to do its job. Make sure there's enough oil in the reservoir, and see if the oil in the reservoir is gritty or if there's sludge on the bottom. You holler for a mechanic if the oil's in bad shape.

M123A1C 10-TON TRUCK...

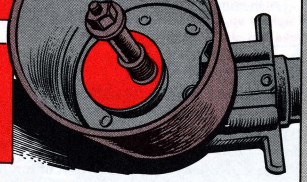
FOR A GOOD STEER

CRASH

YOU DON'T HAVE TO SUFFER WITH STEERING PUMP HEADACHES IN YOUR M123A1C OR M123E2-10 TON TRACTOR TRUCK... HERE'RE 2 PAIN RELIEVERS:

1. Install an "in reservoir" filter. The kit comes under FSN 2530-134-4980. Instructions for installing the filter are in TB 750-981-1 (Jan 70), Article 36.

2. Put nothing but OE 10 in the reservoir (or OES in extreme cold weather), as specified by LO 9-2320-206-12 (Mar 66). Make sure that OE 10 is clean, and be mighty careful to keep dirt out of the reservoir while you're filling it.



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HE ZIGGED WHEN HE WANTED TO ZAG!

Real important is a complete filter service after your new filter has been working for 30 days—it's going to pick up a lot of stuff at first. It's up to the operator to write up this service on his DA Form 2404.

Your mechanic will drain the reservoir, take out the filter, then clean it, put'er back in and refill the reservoir with oil. If the filter is mucked up so bad it won't come clean, he'll put in a new element, FSN 2530-986-7596.

This filter element has to be replaced every 6-months-or-6,000 miles as part of the regular reservoir service (the "12" interval in LO 9-2320-206-12 for steering reservoir is being changed to "6").

I CLEANED THE FILTER THIS MORNING...

IN THIS DUST BOWL YOU GOTTA CLEAN IT AGAIN TONIGHT!

Keep in mind, though, that your filter may need servicing more often, like when you're operating in real dusty country. You'll know trouble's in the making when your power steering starts acting up—like you've got power off 'n' on.

So you check your reservoir and filter for contamination—gritty particles or sludge—or a metallic sheen on the filter element. If a new filter element doesn't put you back on the road in good shape, get your support to troubleshoot your steering system.

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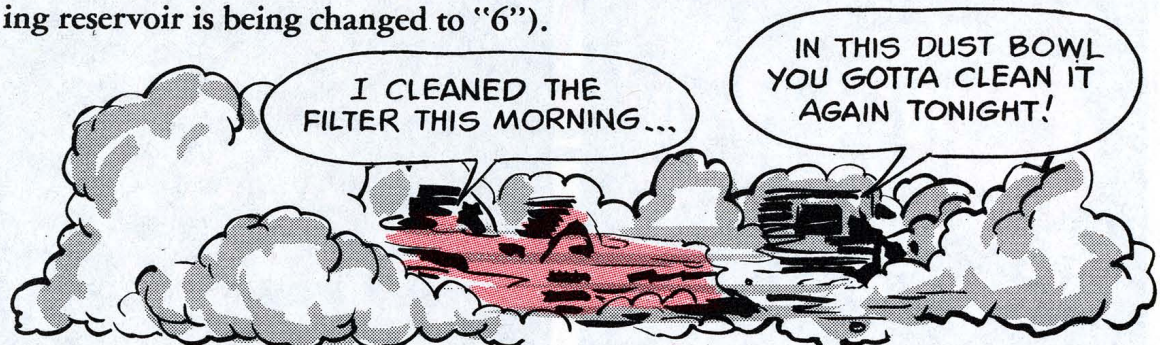

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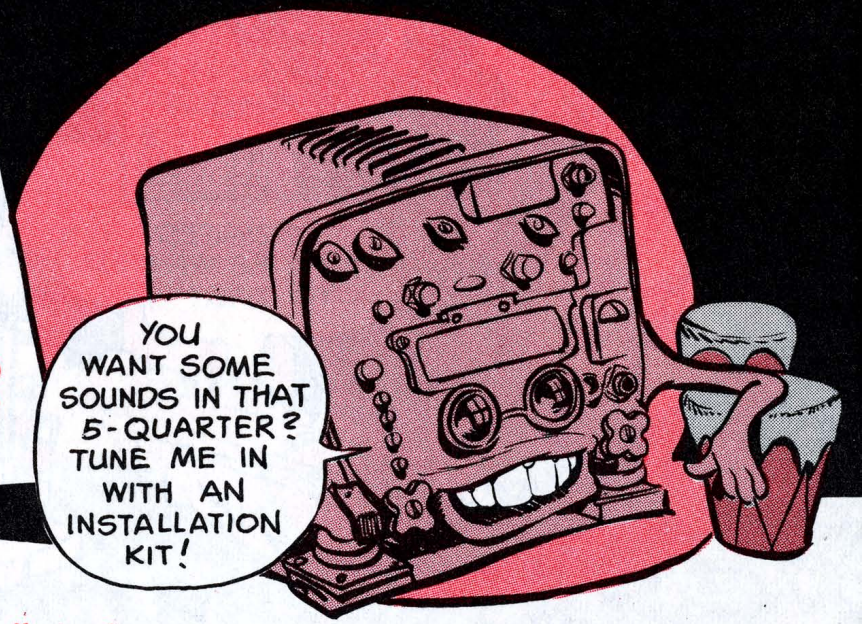
COMBO FOR A 5-QUARTER



Dear Half-Mast,

Is there a combination installation kit I can use to mount my commo equipment in the M715 1-1/4-ton truck?

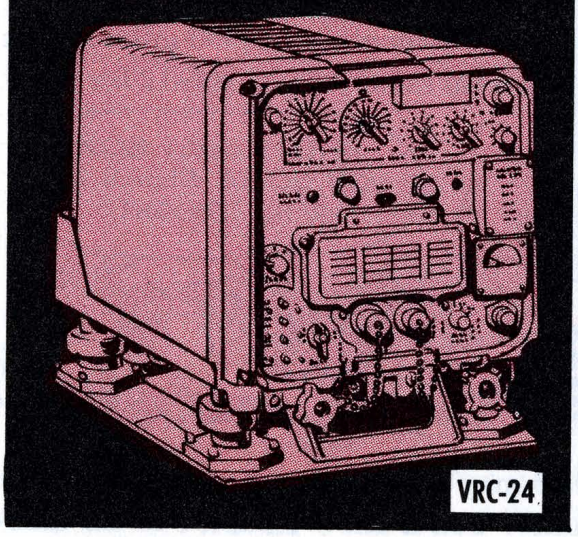
SGT J. J.

Dear Sergeant J. J.,

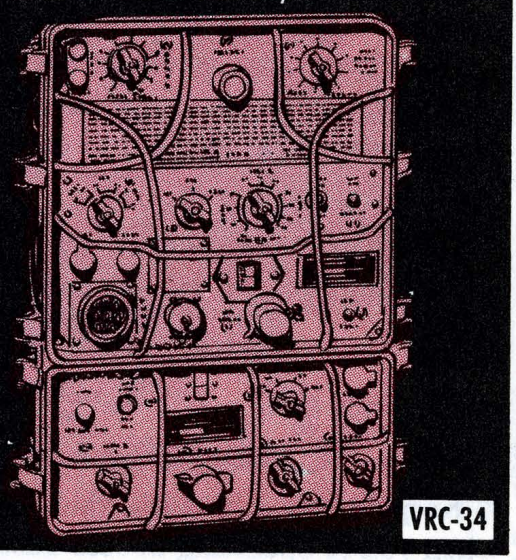
Yep. Fact is, there're 2. What you do is get the installation kit for each radio set, or whatever, which you plan to mount in the 5-quarter.

Also, you need these additional combination kits:

If you are mounting the AN/VRC-24 with other radio sets, you need Combination Kit #32, FSN 5820-926-7250, plus the kits for all the sets, including the VRC-24.



If you are mounting the VRC-34 or the GRC-87 radio sets with any others, you need Combination Kit #31, FSN 5820-926-7249 . . . plus all other kits, naturally.

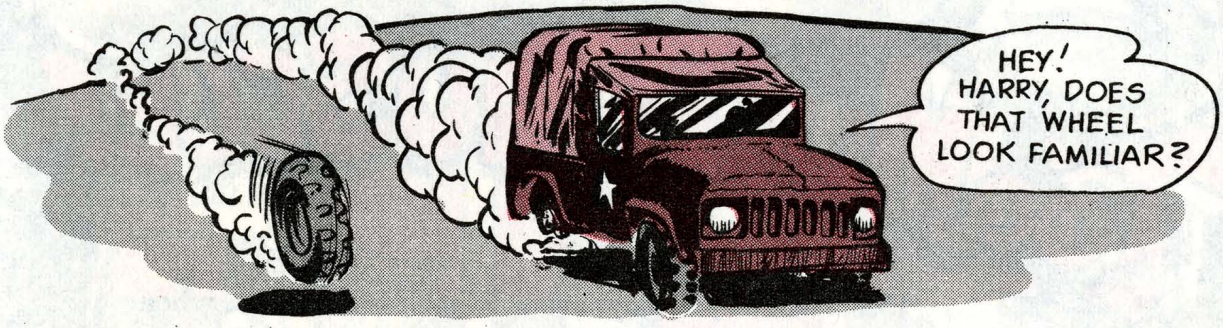


Your authority is SB 11-131 (Nov 68), and examples of the above are spelled out on pages 2-88 thru 2-91 of that SB.

And just in case you missed it back in PS 212, FSN 5820-937-9847 will get you an installation kit that'll put your AN/GRC-19 radio set in the M715. The FSN didn't make the SB.

Half-Mast

3-WHEEL TRUCK?

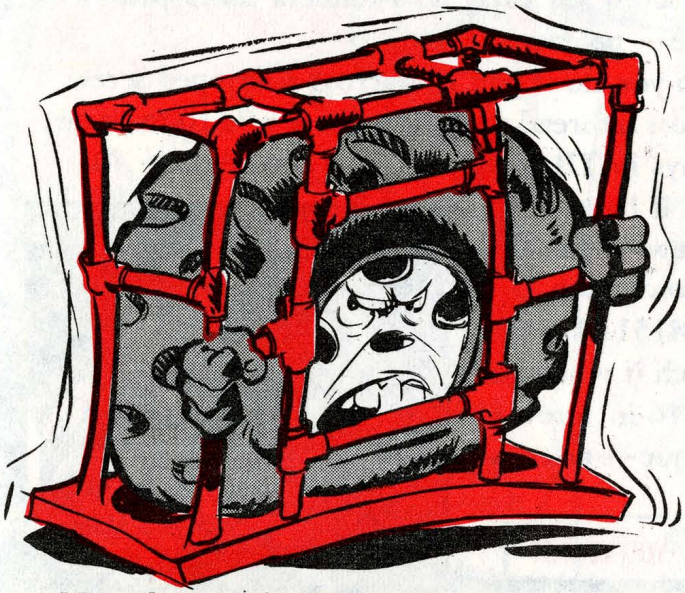


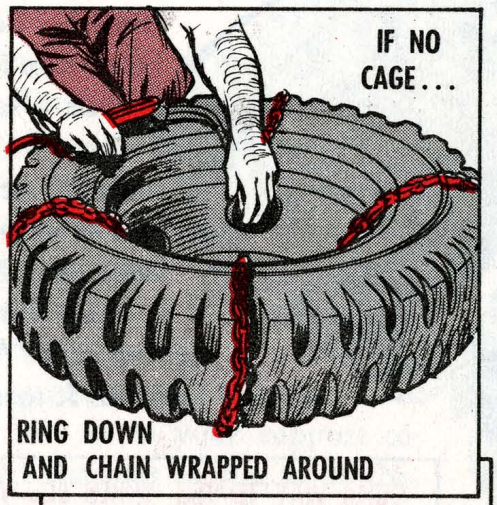
It's no fun to lose a wheel while toolin' down the road in your M715 5/4-ton truck (or M725 ambulance).

It has happened!

And it can happen to you if you don't check all 4 wheel-backing plates. You might find a loose one. Take care of it quick, like it says in TB 750-981-4 (Oct 69), Article 3-15.

REPAIRING A TIRE?



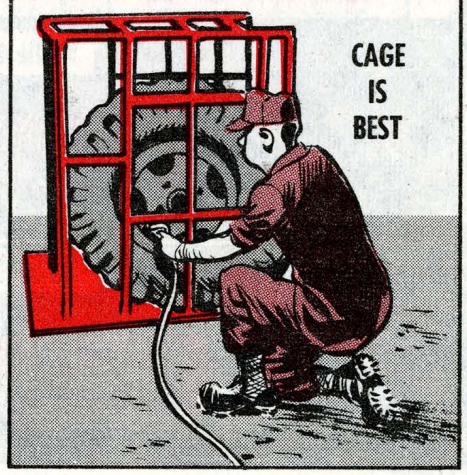


Next flat you fix, remember this when you go to put air in it:

If possible, put something between you and the tire.

With locking rings, turn the rings toward the ground before you inflate. Also, wrap a tow chain through the rim and wheel . . . just in case. Some outfits weld up a tire cage to put tires in while they're being inflated. Make the cage big enough to fit the biggest tire you repair.

Save bruises . . . and worse.



TOO MUCH MUSCLE!

Hey, some of you guys are usin' too much muscle when you tighten that generator adjusting arm-to-cylinder block screw on your M151 1/4-ton truck.

You're strippin' the threads right out of the block!

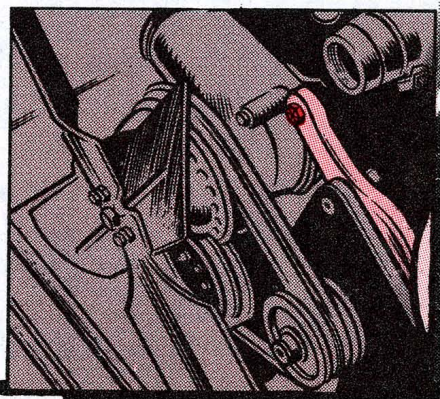
Maybe you're not usin' a torque wrench like you're s'posed to. Or maybe you're not keepin' a close eye on the torque dial. Or maybe your torque wrench needs calibrating.

That 3/8 -in screw on early 1/4-tonners takes just 30-35 lb-ft torque—no more.

So what do you do if you run across a stripped screw hole? You just rethread the hole and use a 7/16-in screw, like it says in TB 750-981-4 (Oct 69), Article 40.

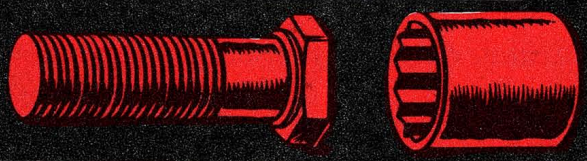
Then you'll have a huskier screw—like's on later production vehicles—M151A1, etc.

And watch it when you tighten that 7/16-in screw—it takes 55-65 lb-ft torque—no more.



QUICK WAY TO TELL WHICH SCREW YOU'VE GOT

3/8-IN SCREW TAKES 9/16-IN SOCKET



GIVE IT 30-35 LB-FT TORQUE

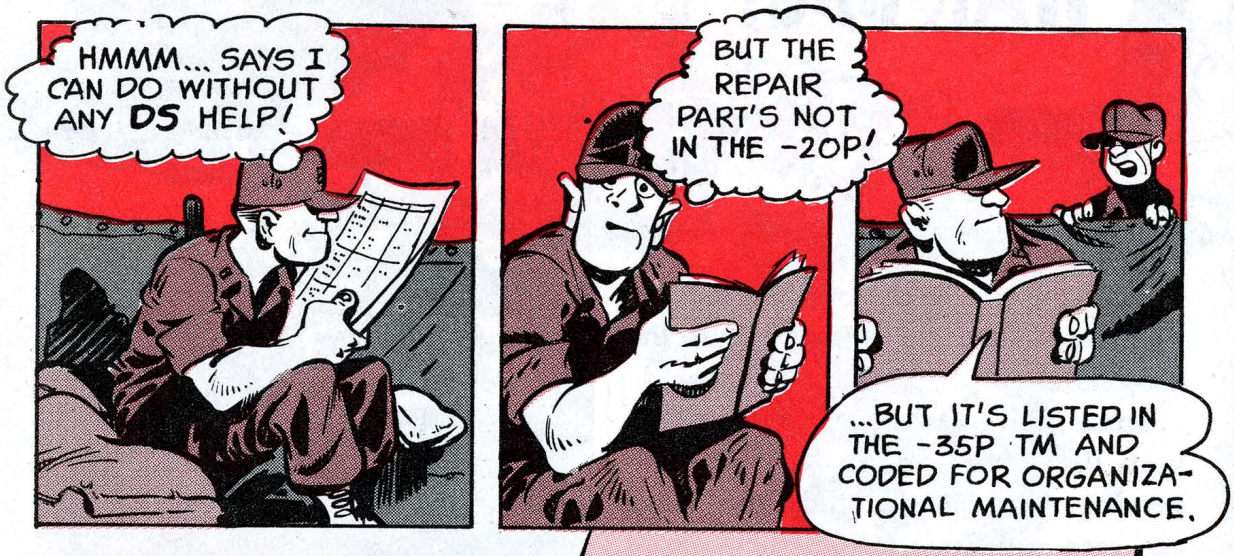
7/16-IN SCREW TAKES 5/8-IN SOCKET

GIVE IT 55-65 LB-FT TORQUE

BETWIXT AND BETWEEN

Dear Half-Mast,

Here's a problem that's all too familiar to Organizational Maintenance:



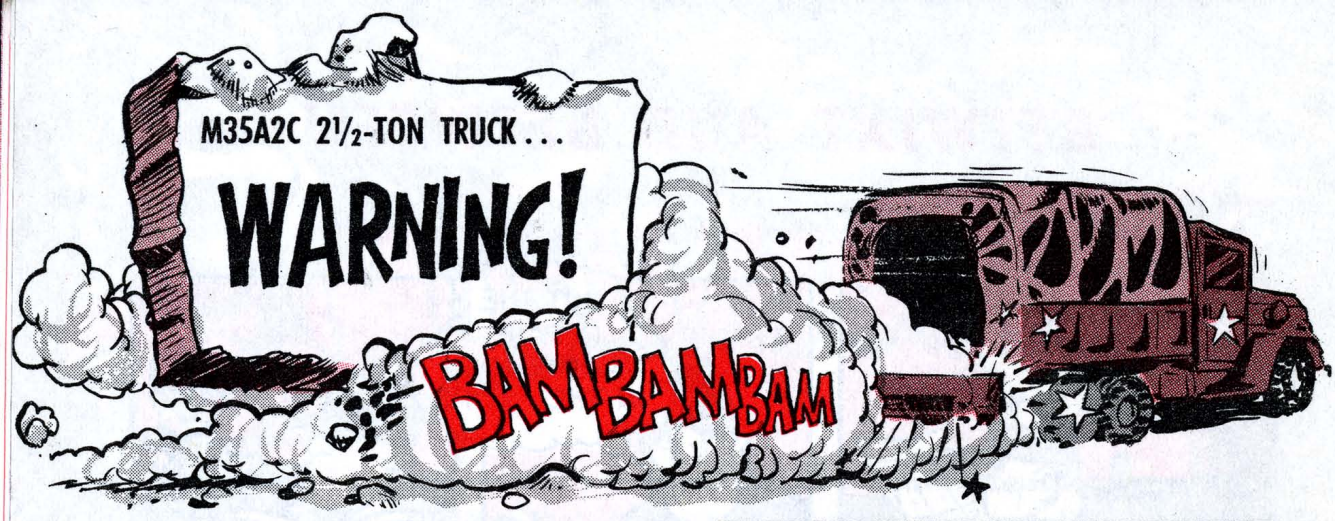
Dear Mr. M. J. M.,

True, unless you have some special command authorization, you are not authorized to order repair parts from the support-level parts manual (-35P, Ord 8 SNL, etc.) even though the part is coded for Organizational Maintenance.

It's up to your support to give the part to you to do the job, or do the repair job themselves.

In the meantime, send a DA Form 2028 every time this comes up so the outfit responsible for the -20P TM will add the part to the TM.

Half-Mast



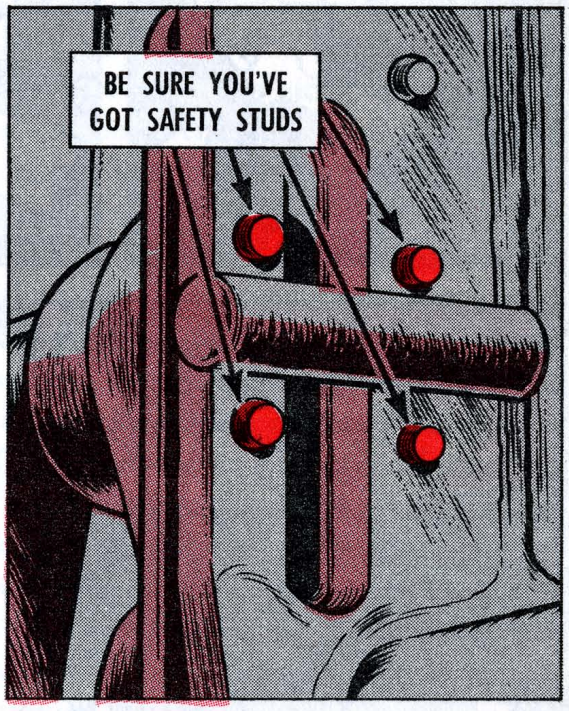
You'd better check your M35A2C 2-1/2-ton cargo truck — the job with the drop sides.

Some didn't get the safety studs that keep the T-bar locking handles from turning. Without the studs, the T-bar can turn and line up with the locking slot.

Your tailgate or drop sides can flop down suddenly!

Studs missing? Then get a hold of TB 750-981-3 (Jul 69) and eyeball Article 3-6 for instructions on putting these safety studs at all 4 corners of the cargo body.

Need a new latch? It's handle, locking, FSN 2510-109-8212.



M127A2C TRAILER TIPS

If you've got trouble with the landing legs on your M127A2C 12-ton semi-trailer, you may find the cure in the TB 750-981- series.

Check Article 33, TB 750-981-4 (Oct 69), for what-to-do-about landing legs that collapse.

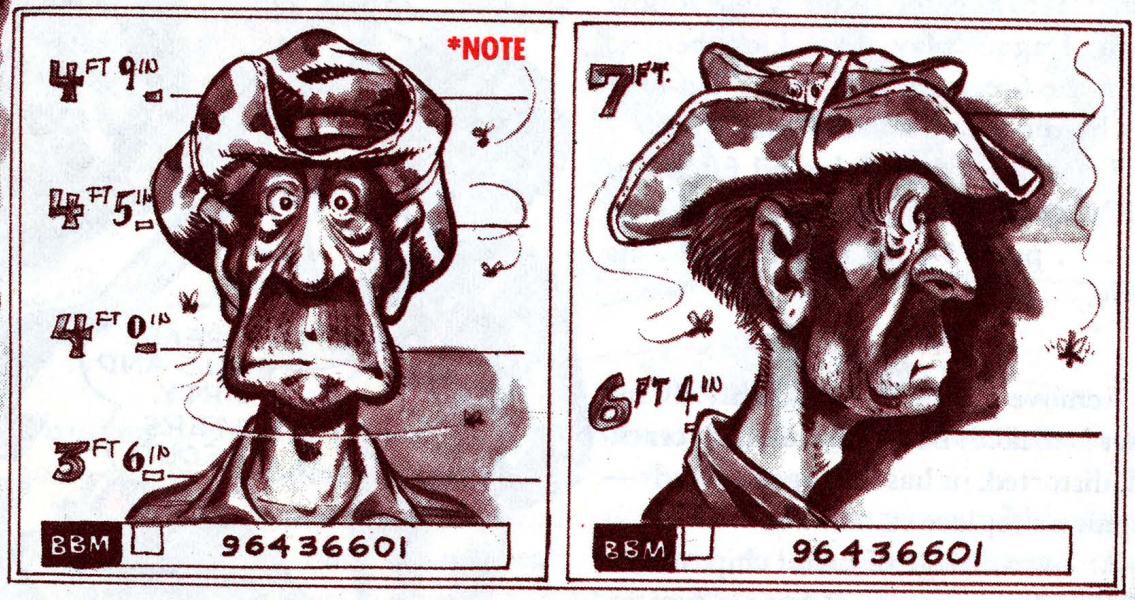
Article 37, TB 750-981-1 (Jan 70), offers a fix if the landing leg foot rubs against your tractor tire while turning on rough ground.

WITH FRIENDS LIKE THIS...

WHO NEEDS ENEMIES?

WANTED:

For Destruction of Army Vehicles



BUSTER UPP, Alias **TERROR UPP, THE COWBOY, THE BUTCHER, THE JUNK MAN.**

POPS CLUTCH — Fails to let up on pedal easy to engage clutch smoothly. This leads to short clutch life, damage to transmission and rest of power train.

RACES ENGINE while shifting gears — Fails to let up on the gas while declutching and shifting gears. This causes same damage as clutch-popping.

SKIPS GEARS — Starts out in 2nd gear and skips other gears when shifting up and down. This throws heavy shock load on whole drive train.

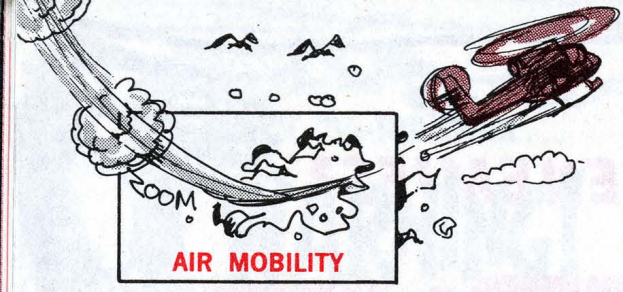
RIDES CLUTCH PEDAL — Uses clutch pedal for footrest. This takes up clutch "free travel" and leads to clutch chatter. Then — clutch failure.

Often wears uniform of U.S. Army soldier. Usually assigned to equipment operator duty. Physical appearance varies — may be tall, short, fat, skinny, red-haired, black-haired, etc.

Carries proof of operator qualifiication, although his performance will make you wonder how he got it.

APPROACH WITH CAUTION — He may be armed (with deadly equipment).

***NOTE** — Buster's gas foot is 41 inches longer than his clutch foot.



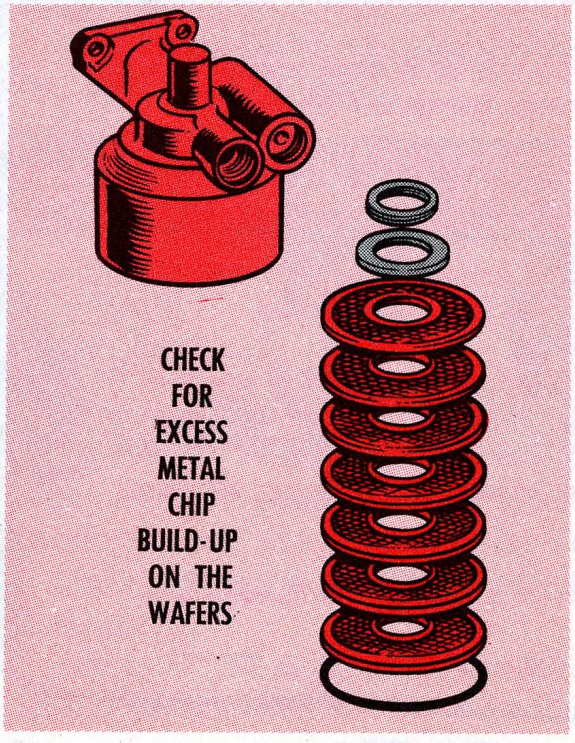
A new or overhauled Hueybird engine changes the starting line-up of the ole PM ball game. You don't follow bush league play like kick-the-tire, light-the-fire, and pull pitch. Un-uh!! It's by-the-rule book PM that wins.

F'rinstance, the engine oil filter gets a PM check after the first ground run-up . . . para 5-310 0-level TM rule book.

FILTER CHECK

Remove the oil filter assembly. If any part is nicked, burred, scratched, cracked, distorted, or has damaged threads — repair or replace it.

An over-dosage of metal chips on the wafer filters and you'll have a first inning strikeout. Find and eliminate the cause of the crud build-up.

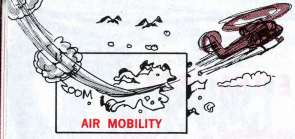


FILTER ASSEMBLY

If you find nothing amiss, re-assemble the filter. Hold one, Slugger-mec. How much power did you use to tighten the through bolt that holds the assembly in its housing?

Grand slam? Bunt? 'Bout THAT much? Until it was snug?

Oh, my aching back!! That bolt gets 20-35 in-lbs of torque and NO more,



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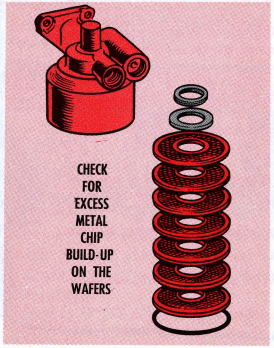

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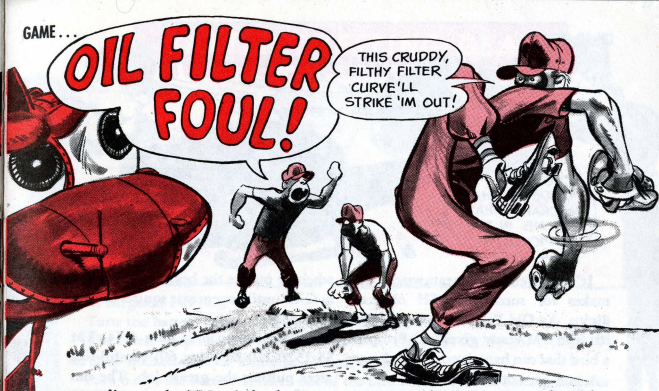


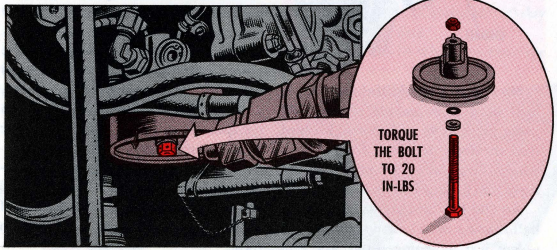
according to the TM rule book. Use a torque wrench, please. No mocky-nicky, home run or bunt deal goes.

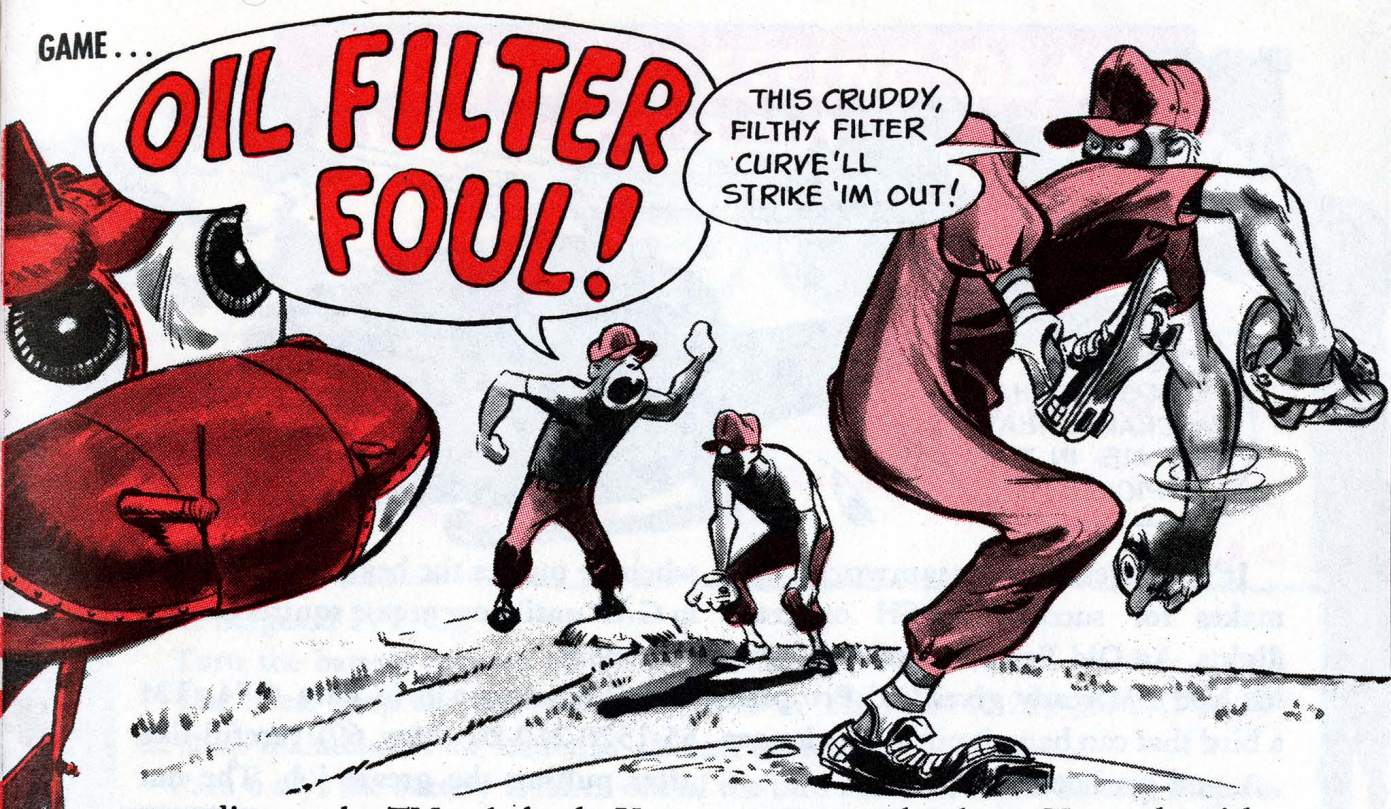
Use the right size torque wrench and stop twisting when you see 29 in-lbs on the scale—a drag bunt, so to speak. Stopping on the low side won't mash those filters, and they'll give you All-Star performance. Finally, you do the safety wire bit to keep the filter bolt doin' its job.

Too much power, and the wafer filters get squashed—oil by-passes filters . . . the engine runs a high temperature and gets a bad case of oil pressure surgitis.

Too little torque and the packing doesn't seal right . . . the engine'll die of oil starvation.

Pulling major league by-the-rule-book PM will put you and your bird on a pennant winner, every time.





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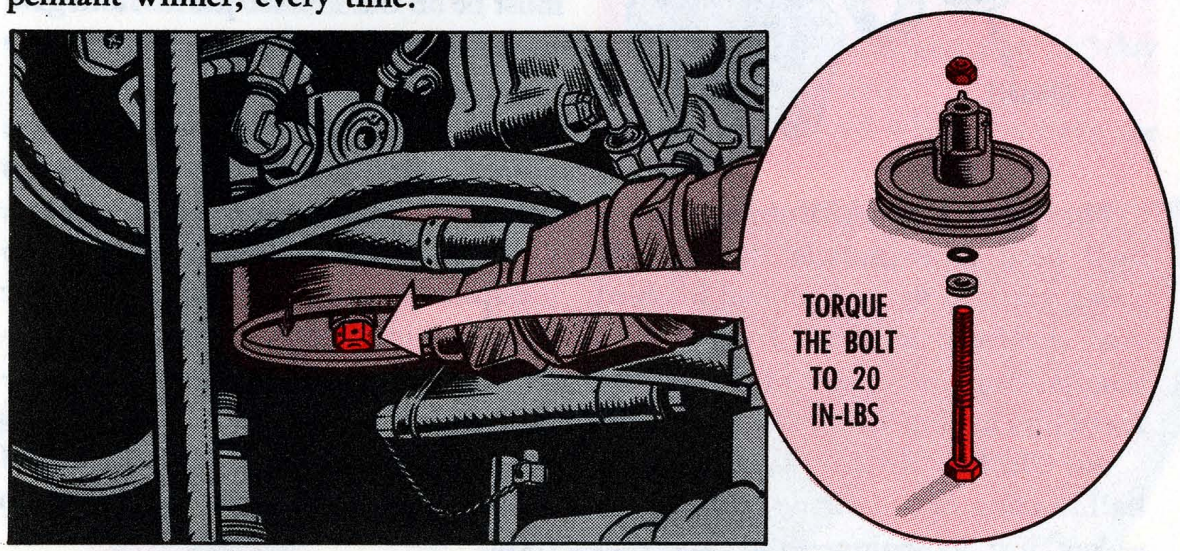
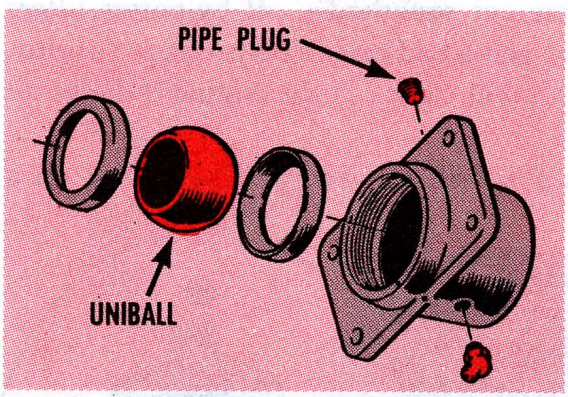


PM-ING UNIBALL BEARING

It's professional teamwork that makes for successful ASH or trash flights. An Old Pro mechanic who gets his bird PM ready gives Old Pro pilot a bird that can hang it out a mite longer . . . and get home safe.

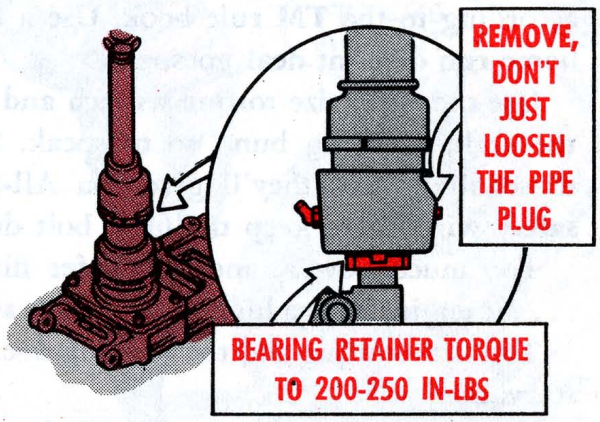
When a less-than-professional Hueymec doesn't follow TM PM pointers he puts Peter Pilot in a pickle. Like maybe he does a poor purge job during 3rd PE on the Huey's cyclic hydraulic cylinder uniball bearing.



No matter how skillful the pilot is, he'll need more muscle than a jolly green giant to fly and control his bird. And the force feedback from those 2 windmilling maxi-size knife blades will leave him aching and shaking for sure!

An Old Pro birdmec keeps that uniball bearing in A-1 shape by removing —not just loosening—the pipe plug when he purges the bearing. He shoots in GAP until new grease squirts out the pipe hole.

Follow the poop in para 6-74, TM 55-1520-210-20 (May 69) careful-like after pulling the grease job. The nut



assembly and bearing retaining nut must be on the TM torque mark to give the pilot smooth cyclic control. Not too tight, not too loose.

Any extra hydraulic fluid on the power cylinder calls for an all-parts check for damage, corrosion, pitting, distorted threads. Fluid and GAP do the split bit every time, so if hydraulic fluid gets into the uniball area, a bearing purge might be all the PM required. But do it right.

Yup, professional pilot-mechanic PM teamwork will bring the birds back to roost.

BATTERY TESTING DEAL

Dear Windy,

Awhile back, TM 55-405-3 on maintenance of aircraft systems called for a battery capacity check every 120 days.

Then along came Ch 3 to the manual which removed the info.

What's the latest on battery testing, Windy?

SFC F. P. C.

Dear Sergeant F. P. C.,

Turn the battery over to the shop for testing.

The latest poop on **lead-acid** batteries is in TB 11-6140-219-35/1 (Dec 69) on shop maintenance of lead-acid aircraft batteries.

Para 6 says the battery is taken out of the bird and sent to the battery shop for specific gravity, leakage and voltage tests every 120 days or 100 flight-hours, whichever comes first.

The test, which can be done during the Periodic Inspection, determines battery internal condition and capacity.

When you have the battery serviced make suitable entries on the bird's DA Form 2408-18.

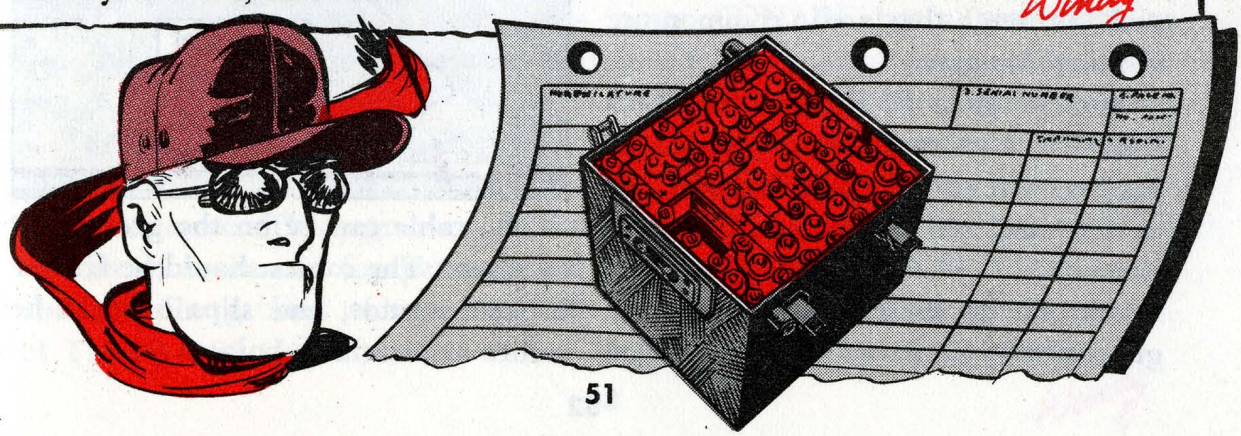
For example, in the reference column of the form put—TB 11-6140-219-35/1. In the frequency column put—120 days/100 hrs. In the inspection column put the date/PMP number.

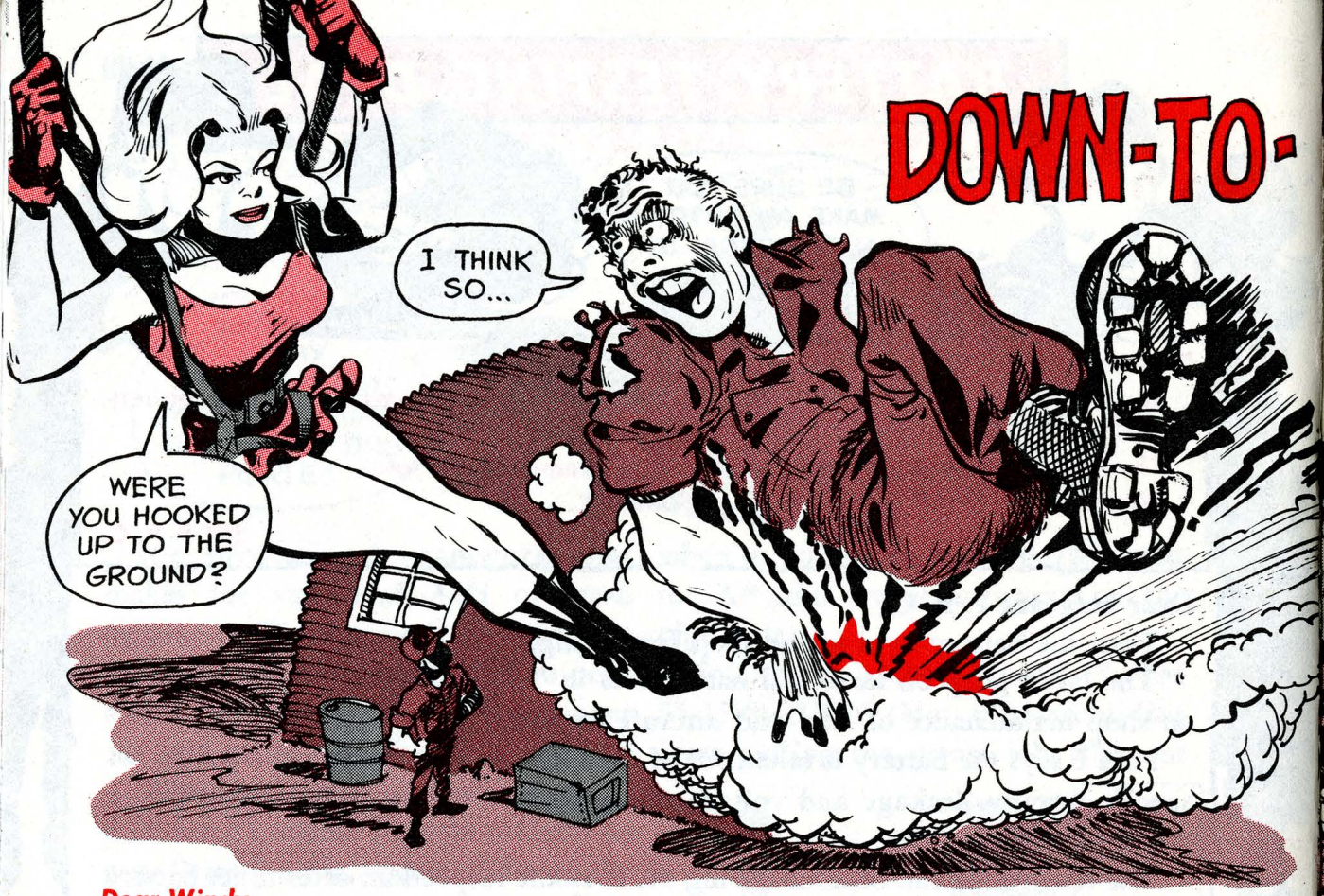
If you have a **nickel-cadmium** battery in your bird you'll find all the poop you need to maintain that baby in TM 11-6140-203-15-2 (Dec 69) on aircraft nickel-cadmium batteries.

You have weekly or 25 flight-hour PM checks and services and also 120-day or 100 flight-hour checks and services, whichever comes first.

So, make suitable entries on the bird's DA Form 2408-18 when you have the battery serviced, sure 'nuff.

Windy





Dear Windy,

We got gigged during a recent inspection because we weren't up to snuff on our aircraft overhead grounding cables.

Some cables were missing, damaged, and there was no record of an ohm test.

What are the ground rules on those cables, Windy?

SP6 J. B. G.

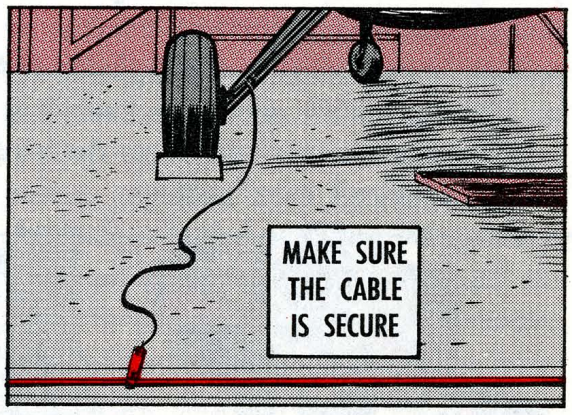
Dear Specialist J. B. G.,

I'm glad you asked. Latch onto a brew and sit a spell because the answer comes from both military and civilian pubs.

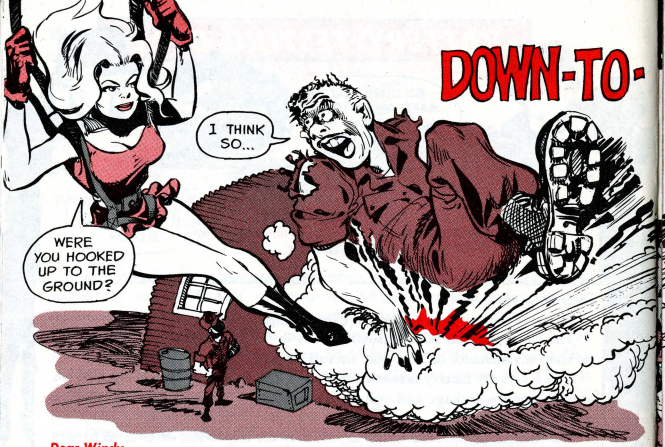
Army and civilian pubs don't mention overhead grounding systems, as such, although they are in common use in many hangars.

'Course, para 10-3b(5) of FM 1-10 (Sep 65) says that aircraft stored in hangars will have the proper grounding devices and will be grounded at all times.

All birds should be effectively grounded by means of a cable attached to a structural member of the aircraft and to a low resistance ground.



The cable can be on the ground or overhead. The cables should be free of broken strands, and slips have to be secure at attaching points.



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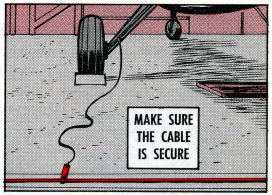

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Attach red cloth warning flags to the ground cables where they are a safety hazard to mechs working around aircraft. Those words of wisdom are in para 1-52 of TM 55-1500-204-25/1 (Apr 70).

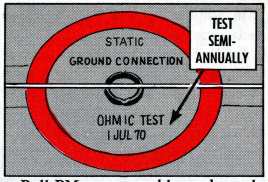
Chap 1, para 1-5b of AR 420-90 (Apr 70) says to use nationally recognized fire protection standards when there's no specific Army reg, directive, manual or standard.

So-o-o-o, the National Fire Codes, Vol 10 (1968) cover hangar grounding facilities for static electricity — in Chap 13, paras 1301, 1302, 1303 and 1304. Vol 9, Chap 3, paras 3110 thru 3153, give more poop on bonding to protect aircraft from static discharges.

'Course, static electricity can ignite fuel fumes that collect in a closed hangar. Nobody wants to experience the big BOOM!

Those civilian codes establish 10,000 ohms as the desirable maximum allowable resistance. This agrees with the maximum resistance for parking and fueling point ground rods in para 130 of TM 10-1101 (Jul 65).

The grounding devices should be tested semi-annually. Stencil the date of the last test within a red circle painted around the ground rod.



Pull PM on your cables and get the testing done on the grounding device with a work order to post engineers. They have the equipment and specialists to make the test.

One more point applies to Stateside posts. CONARC has a new marking plan for permanent ground rods or electrodes at each **parking** and **refueling** point. Each grounding device is marked with an 18-in diameter yellow circle having a 2-in black border. STATIC GROUND CONNECTION and OHMIC TEST, plus the last date tested, appear on the face of the marker.

Windy

EARTH PM

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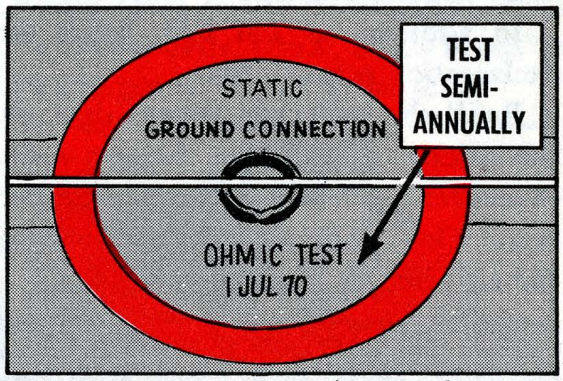

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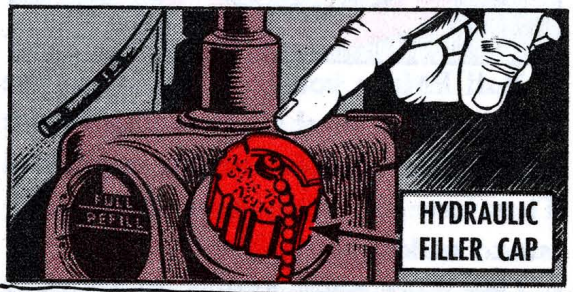
Windy

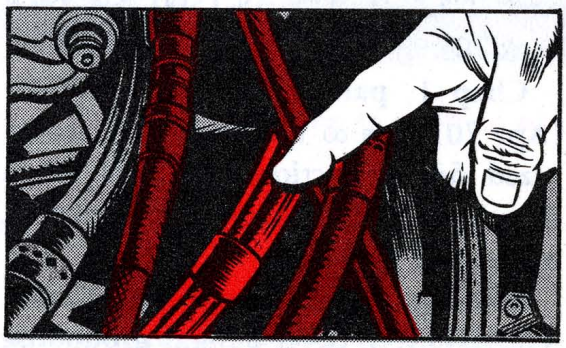
The CH-54A Sky Crane will put out like an eagle as long as you put in plenty of PM. It's basic, because a little won't make it go a long way.

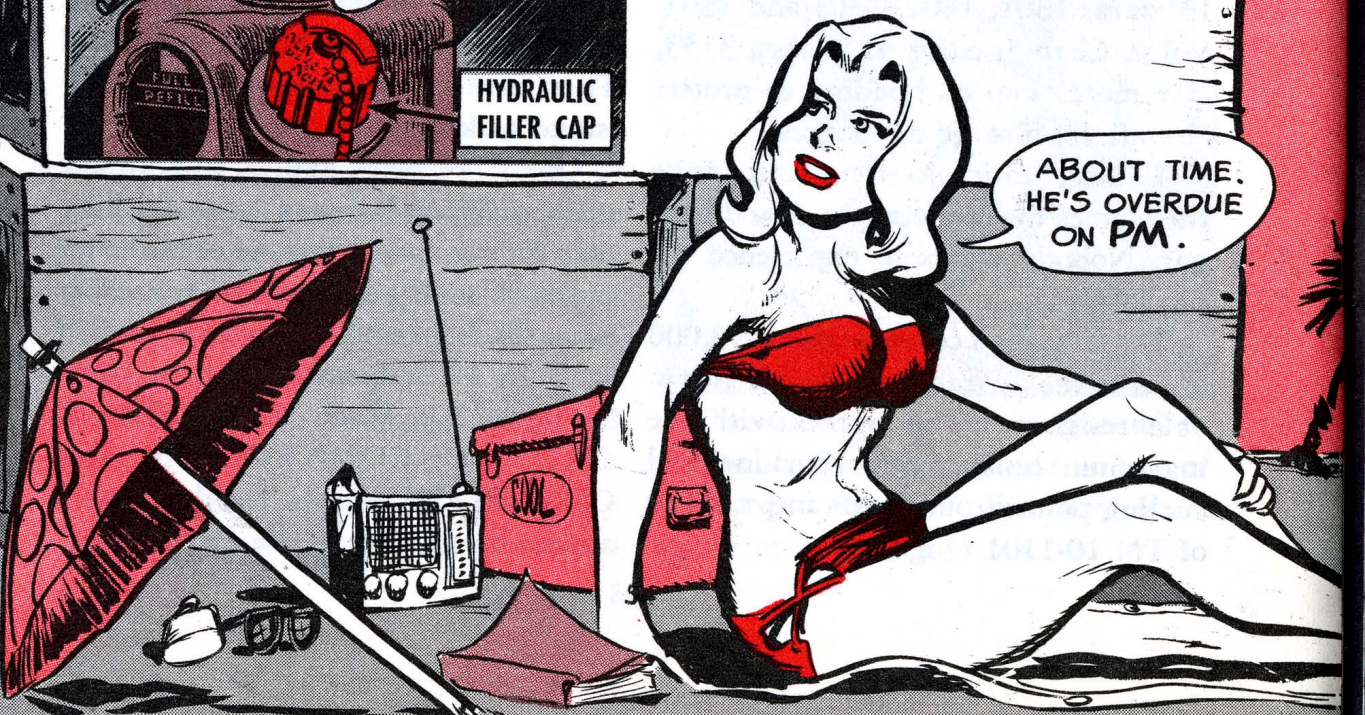
In addition to TM PM, here's an exclamation point or two:

Refill the hydraulic system through the filler cap. Wouldja' believe some jokers feed the fluid in through the air vent? That, naturally, sets the ship up for all kinds of fun and games.



Also, hydraulic lines chafe, clamps break and otherwise get messed up . . . so daily inspections are a must. Replace 'em before they make trouble.





SKY CRANE TOPICS

The CH-54A Sky Crane will put out like an eagle as long as you put in plenty of PM. It's basic, because a little won't make it go a long way.

In addition to TM PM, here's an exclamation point or two:

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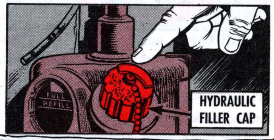

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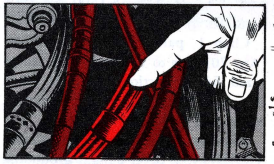
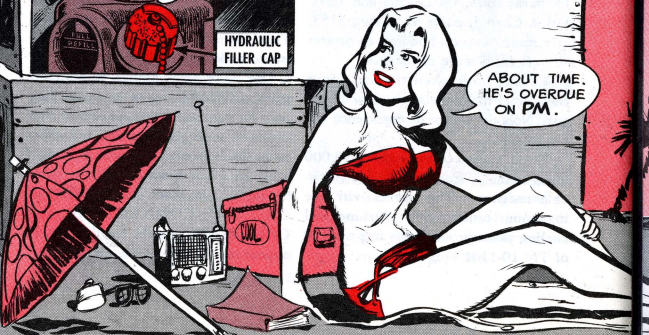


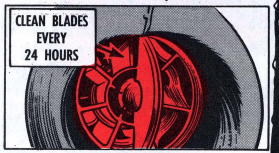


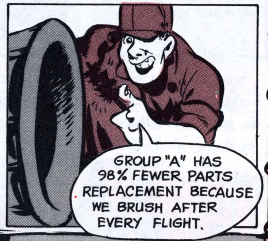
Lessons learned category for SEA types:

During the rainy season water gets to bearings faster'n beer gets to your kidneys. 'Specially vulnerable are the cuff bearings . . . which need purging every 25 hours of operation.

There's a hard-earned axiom which goes: "Grease daily; purge fully!"

Also, in 24 hours of operation dirt builds up enough on the fan blades of the engine air particle separators (EAPS) blower to fairly scream for a cleaning. If you don't get the dirt off the blades you set up the parts for wear or burn out because dirt on the blades makes them out of balance. So, clean the blades daily. Use a "bottle brush" if you've got it. Does a great job.





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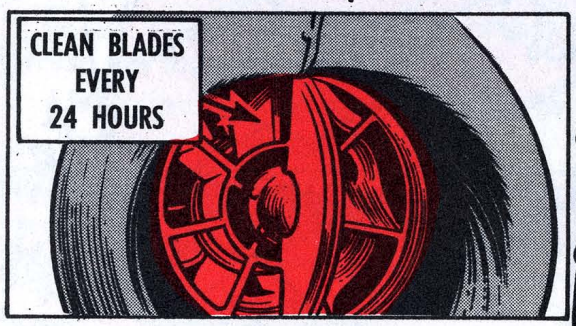
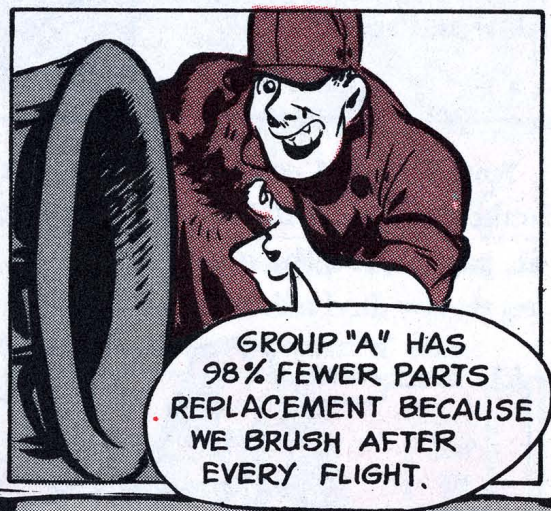
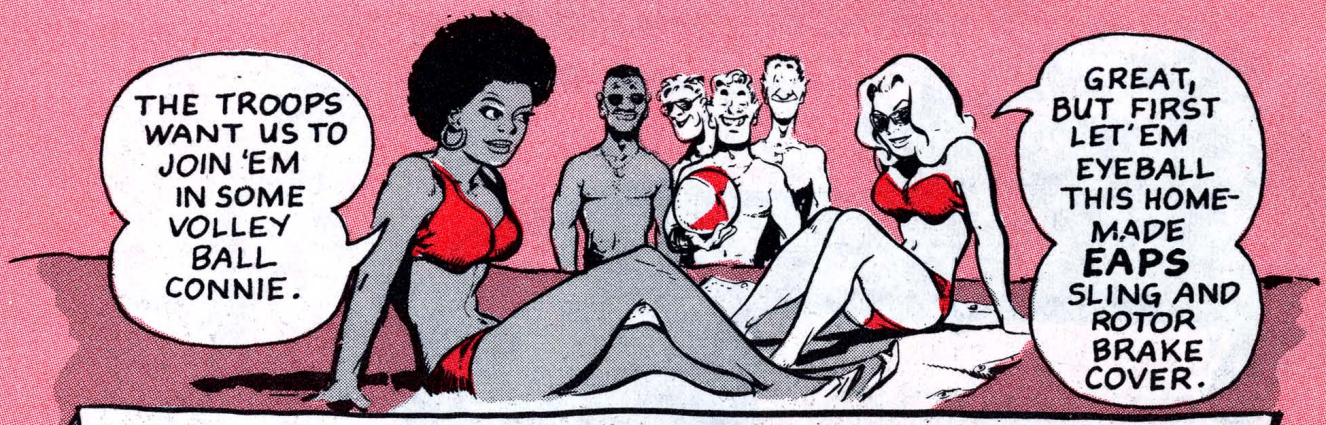


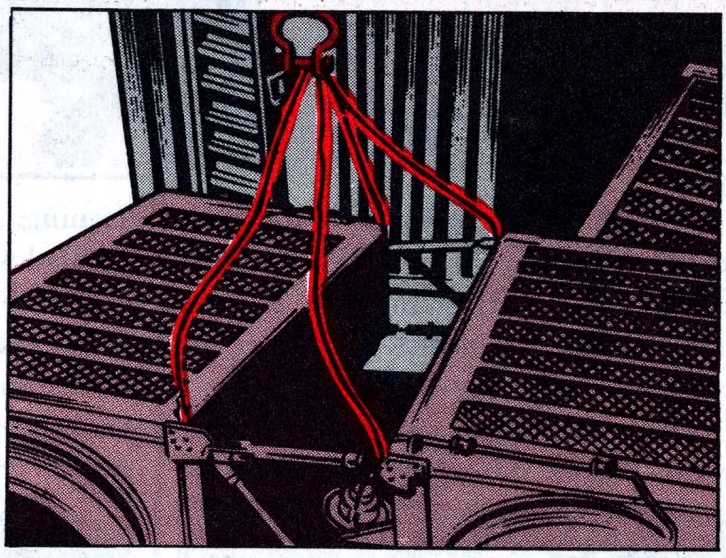


PS MORE

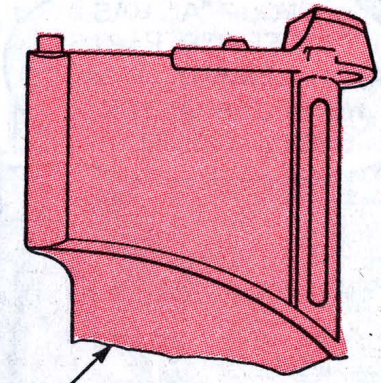


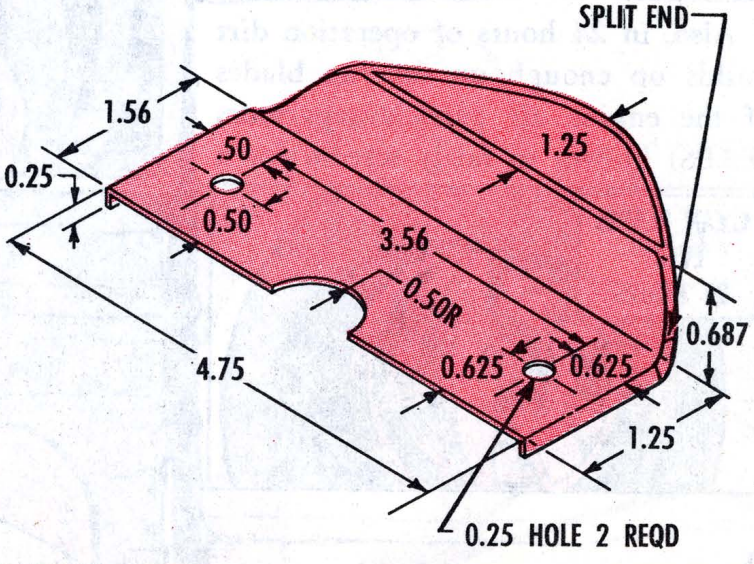
If time's a problem in your town, an EAPS sling can save you minutes, sweat and trouble. You can make a home-made rig to remove both EAPS at once.

Final point on the EAPS, use their protective covers. Saves rain, dust and sun damage.



Another good coverup for rain and dust is an aluminum jacket for the rotor brake package. TB 750-992-2 (Apr 69) shows how the cover is made. Para 41, page 33 has the story.





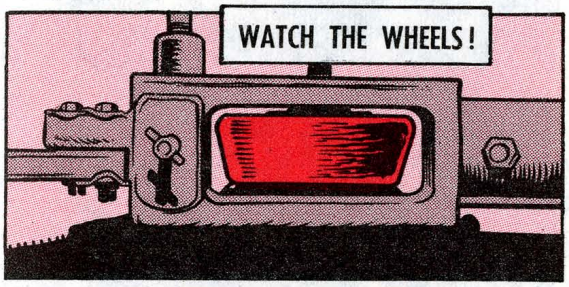
TOW BAR BLUES?

Sure, Birdmec, you pull maintenance on your birds. No sweat. But how 'bout your ground handling equipment? No PM! Oh, my achin' arches.

F'rinstance, take a good look at the ground handling tow bar, FSN 1730-967-9556. Every shop set, ground handling, including airmobile units, have 'em for moving stiff-and flap-wing birds around the roost.

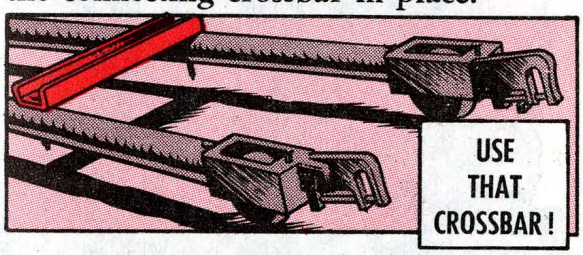
That tow bar does yeoman duty, but it's neglected something awful, especially those 6-in solid rubber tires, FSN 2530-288-0406, P/N WD6106.

You won't find a parts breakdown or written poop on the tow bar, but those wheels need TLC. Watch 'em for irregular wear, cupping, flat spots, one-sided wear.

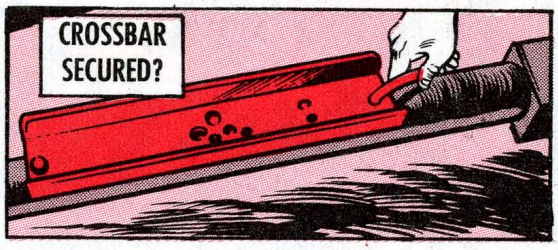


Keep 'em clean. Wipe off avgas, grease, oil immediately.

Always pull an empty tow bar with the connecting crossbar in place.

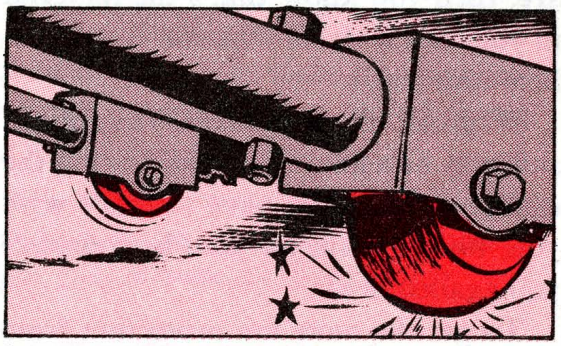


Tow a bird, or stow the tow bar, with the crossbar secured in 2 places. Try to

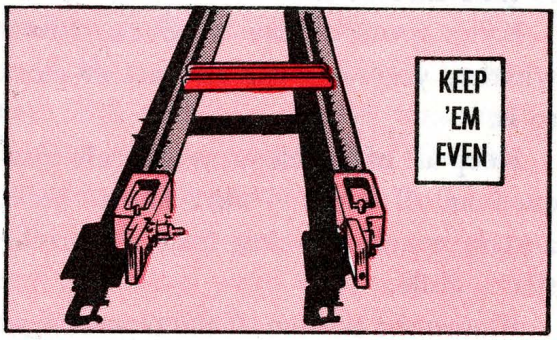


avoid rough surfaces, like PSP . . . wears the rubber wheels somethin' fierce.

Never pull the tow bar around on one leg else you'll give it that run-



down-at-the-heels look. Tow on an even-Steven keel so that both wheels get the same amount of wear 'n' tear.



And when the tow bar is standing "at ease" never park it with the rubber wheels on surfaces soaked with grease or oil. Ruins 'em PDQ.

Heat resistant polyamide fiber — that name may not mean much to you unless you're an aviation crew member. If you are, then you know that's the material in your hot weather aviation crewmembers uniform.

With all those pockets, your flight suit may be a great place for storing the different items you have to carry with you, but its main purpose is to protect you against fire.

To get the most fire protection from your suit, you have to wear it like it's designed to be worn . . . and you have to take care of it.

Keep your shirt sleeves down whether you're in the aircraft or close to it.

Keep all of the closures securely fastened at all times — shirt front, neck, and the touch-and-close fasteners on the sleeve cuffs.

Blouse the bottom of the trouser legs by use of tabs and a nylon fastener.

Always wear your shirt tucked inside your trousers, and never wear synthetic underwear.

IT'LL SAVE YOUR HIDE...

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HOW TO CLEAN

You've got to keep those touch-and-close fasteners clean if you expect them to stay fastened. You can wash your uniform by hand, but be sure and rinse it thoroughly. If you don't, you'll not get as much protection from your flight suit.

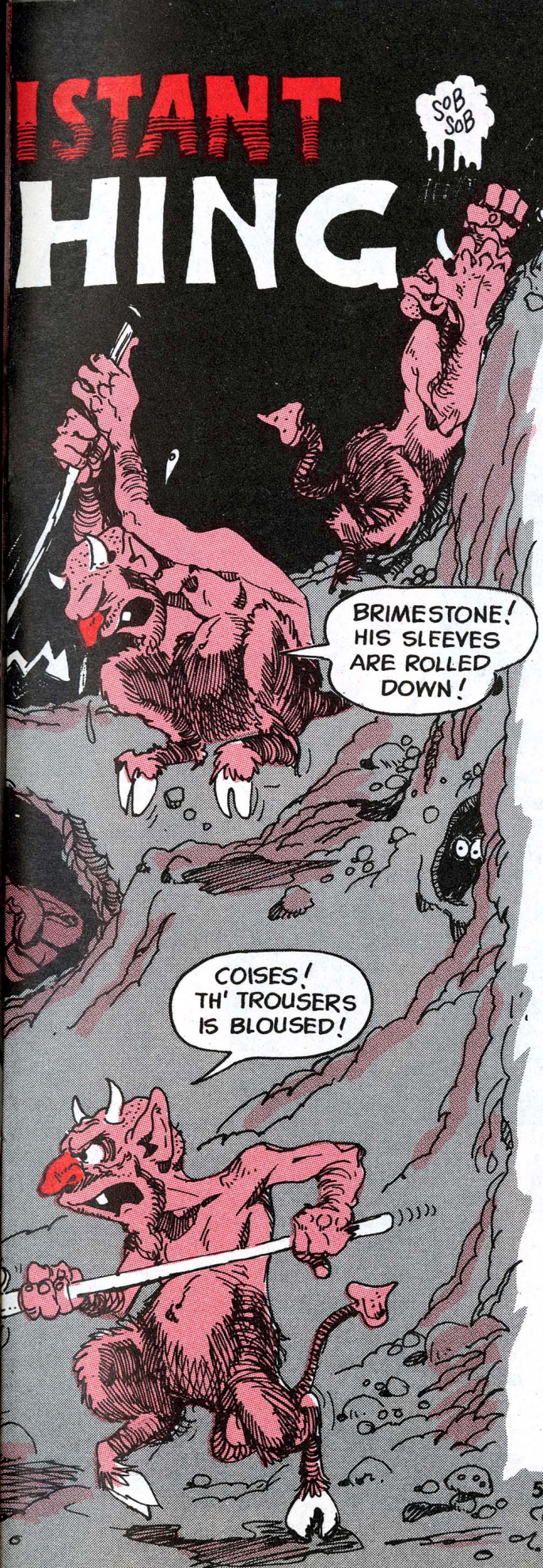
You don't have to give it a flame resistant treatment after you wash it. **Never starch** your uniform because starch will make it less flame resistant.

Your uniform's sewed with a special thread that has that same low flammability characteristic that the material has. So — if you need to repair a rip or a tear, use OD shade S-1 (66022) soft cord filament non-melting nylon thread, 3 ply, Size E, FSN 8310-492-8397.

GUNNERS — UNIFORM NO-NO

Some gunners try to save time by cleaning their weapons while wearing their Nomex flight suits. If you do that, your flight suit may get saturated with grease and cleaning solvent solution. When that happens you lose the fire protection qualities that your suit has. So, NEVER wear your flight uniform when you clean your weapons. Wear your fatigues or other work clothes.

You'll find the FSN's for the different sizes of heat resistant polyamide fiber shirts and trousers in FSC 8415 of the Fed Cat 8405/25-IL-A (Jan 70).



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DON'T FORGET IT...

HEAVY EQUIP

NEVER Depend on other operators to watch out for you while working.

NEVER Operate equipment in an unsafe or questionable condition.

NEVER Ride booms, dozer blades, or droppable pan bottoms.

NEVER Let part of your personal upholstery stick out a window or door.

NEVER Work on top of cabs or drawbars in motion.

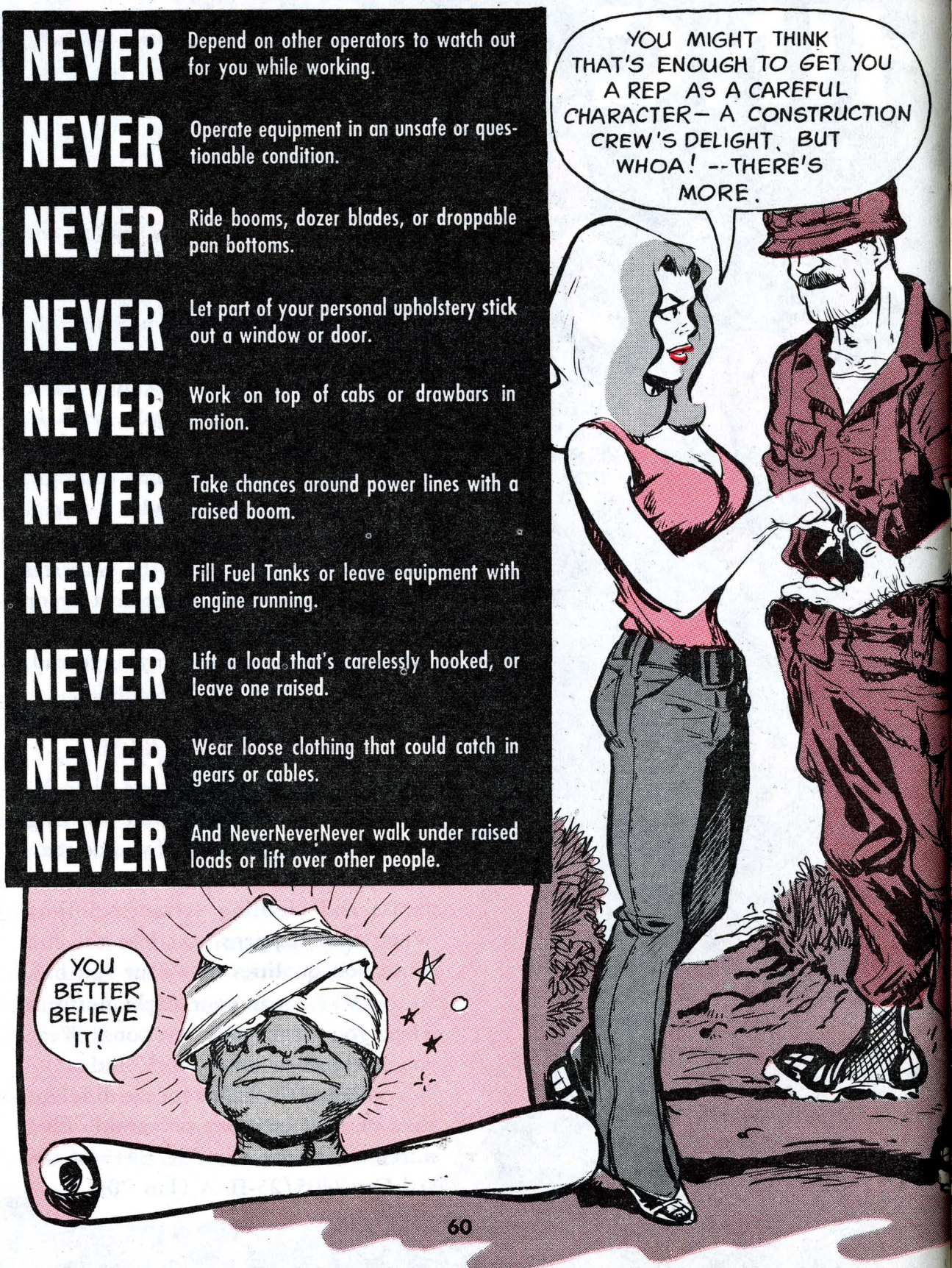
NEVER Take chances around power lines with a raised boom.

NEVER Fill Fuel Tanks or leave equipment with engine running.

NEVER Lift a load that's carelessly hooked, or leave one raised.

NEVER Wear loose clothing that could catch in gears or cables.

NEVER And NeverNeverNever walk under raised loads or lift over other people.



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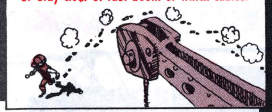
ALWAYS

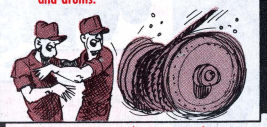
1. Use a signalman to guide you when you back up — or are in a tight place.

2. Use standard hand signals.

3. Stay clear of taut boom or winch cables.



4. Keep hands off working sheaves, cables, and drums.



5. Stop any size machinery to work on it.

6. Put back guards and covers before you start it again.

7. Be sure the spot's clear before moving or dropping a load.

8. Know and heed your equipment's safety limits.

9. Put controls in **neutral**, brakes on, when you leave out.

10. Work off a solid base . . . and keep yourself as sharp as your tools.

Good operation is good PM.

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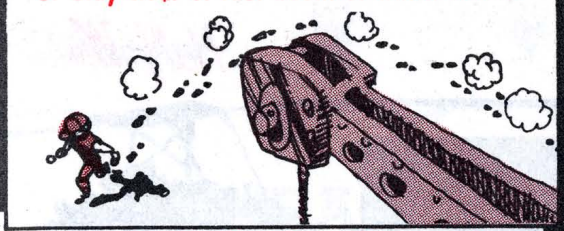

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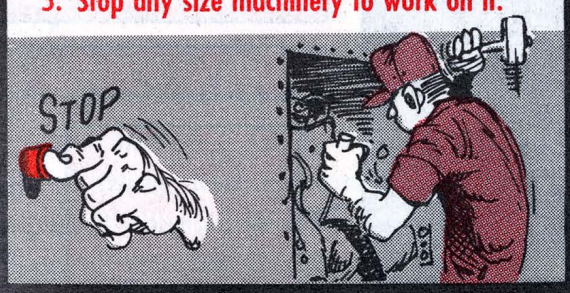

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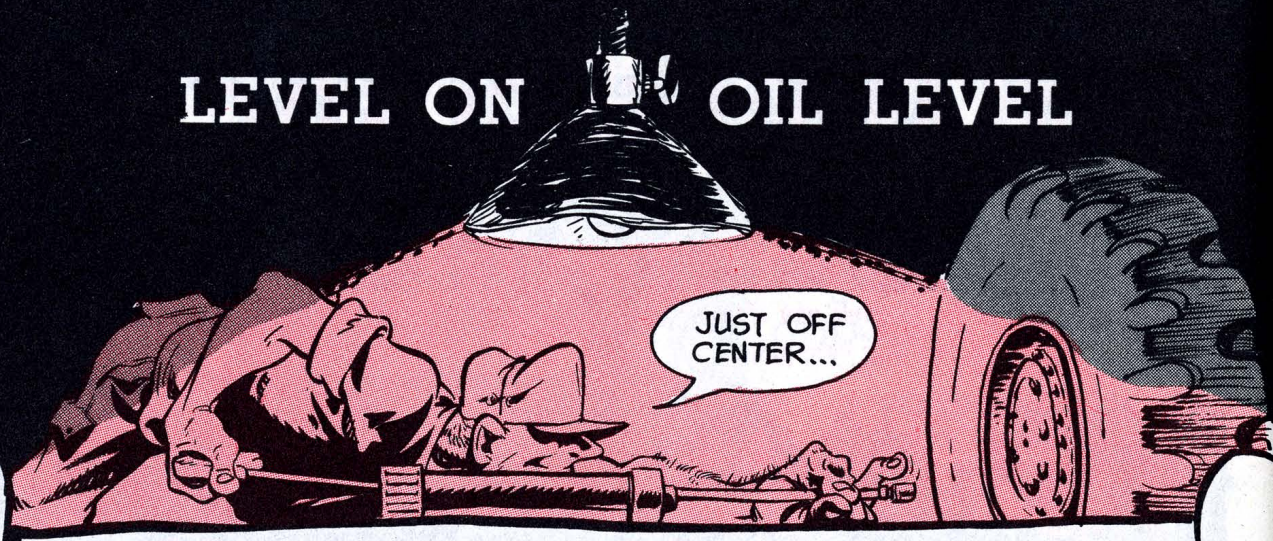
LEVEL ON OIL LEVEL



Dear Half-Mast,

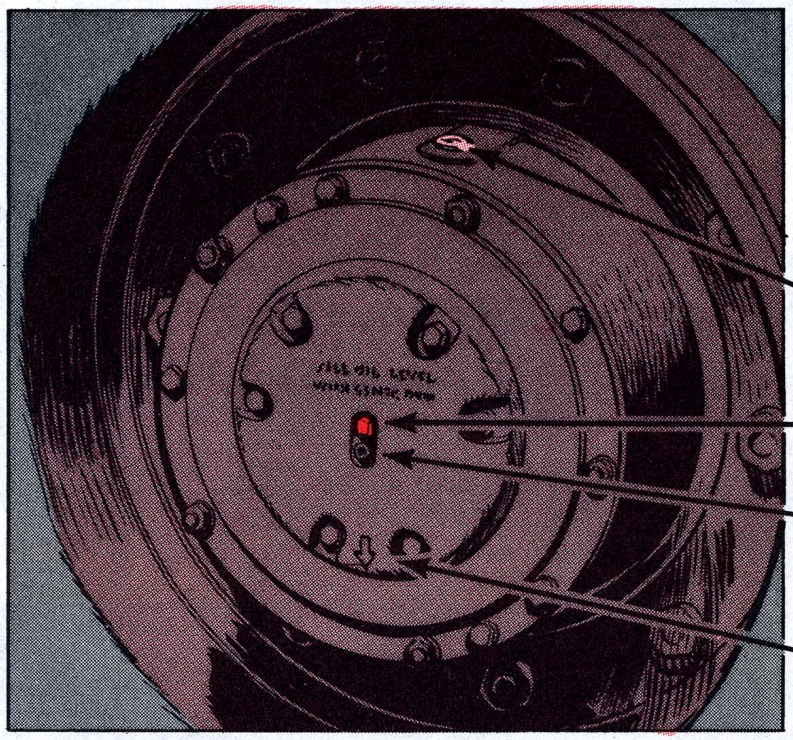
Please settle which is right on oil levels for MLT6 and 6CH forklift drive hubs: do you fill to the plug hole just off hub center, or the recessed plug hole that's dead center?

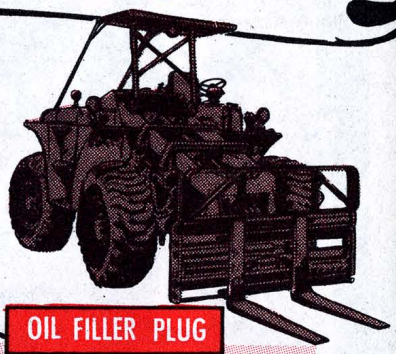
SFC G. M.

Dear SFC G. M.,

The off-center hole is your level check point. Leave the center plug alone. Check and fill with the arrow on the hub rim pointing straight down. Add oil thru the plug 'way up inside the rim top until lube just barely runs out the lower of the 2 holes. If you fill to the center hole, your lube will foam when you work hard, and might bust a seal.

Half-Mast





OIL FILLER PLUG

WHEN USING THIS PLUG AS OIL LEVEL PLUG — OVER-FILLING WILL RESULT

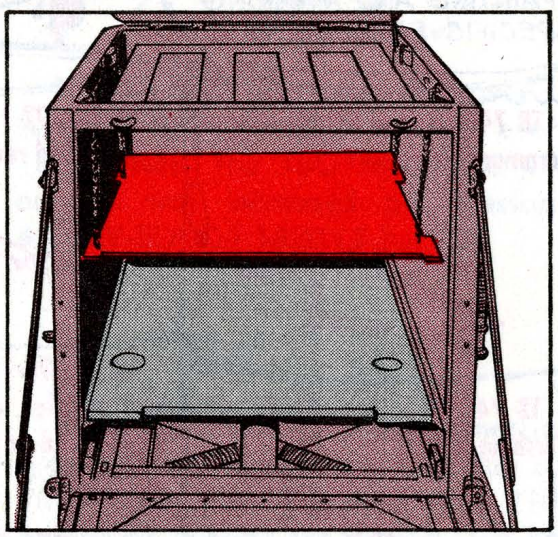
OIL LEVEL CHECK PLUG

POINT ARROW STRAIGHT DOWN WHEN FILLING OR CHECKING LEVEL

FIELD RANGE BAKING RACKS

You can do more baking in your M59 field range if you get baking rack set, FSN 7360-106-5965. It's now a part of the accessory outfit that goes with your range. Change 1 (Feb 70) to TM 10-7360-204-12 shows how to use it.

You can use the same baking rack set on your M1937 Field Range. Order the Rack Set just like you order any part for your stove.



WEAPONS AND MASKS

Dear Half-Mast,

What AR says I can't list an individual's weapon and mask on his clothing form, DA Form 3327?

MSG E. M. S.

Dear Sergeant E. M. S.,

None. Along with the supply room's weapons roster and the individual's weapon and mask cards, Part II in DA Form 3327 is the handiest place you have for recording the items.

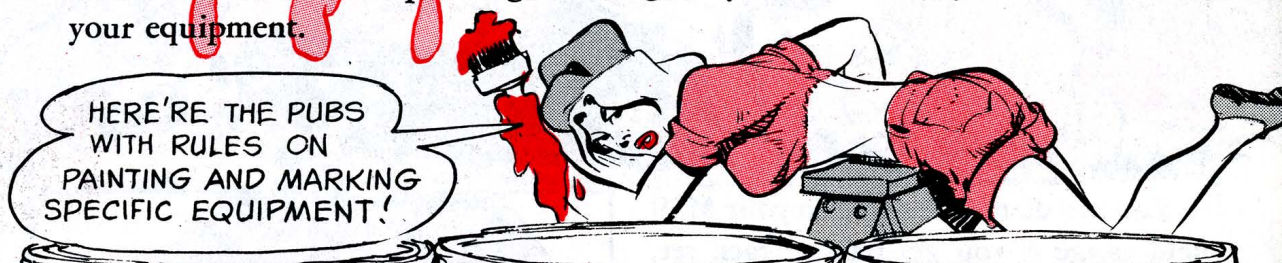
Also, para 5-1, Ch 1, AR 735-35, says all clothing and equipment which is normally turned in when an individual departs, goes on DA Form 3327.

Half-Mast

PM MEANS PAINT, TOO

Preventive maintenance includes keeping your equipment painted. But that doesn't mean you can use just any old paint.

You'll find the basic rules in AR 746-5 (Apr 66), C1, Marking and Packing of Supplies and Equipment, Color and Marking of Army Materiel. It tells you what colors will be used for painting, and it gives you a uniform system for marking your equipment.

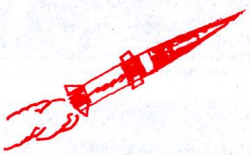


TB 746-10 (Jan 69), Electronics Command equipment.

TB 746-92-1 (Dec 68), Guided missiles and rockets.

TB 746-92-2 (Aug 69), Hawk guided missile system ground support equipment.

TB 746-92-3 (Jun 68), C1, C2, Pershing missile.



TB 746-93-1 (Oct 64), C2, Military vehicles, construction equipment, and materials handling equipment.

TB 746-93-2 (Jun 67), C2, Army aircraft.

TB 746-93-4 (Mar 70), Vessels.

TB 746-95-1 (Aug 64), C2, Towed artillery.

TB 746-95-2 (Aug 64), C1, Rocket launcher materiel.

Here're some pubs that'll make it easier for you to do that painting job:

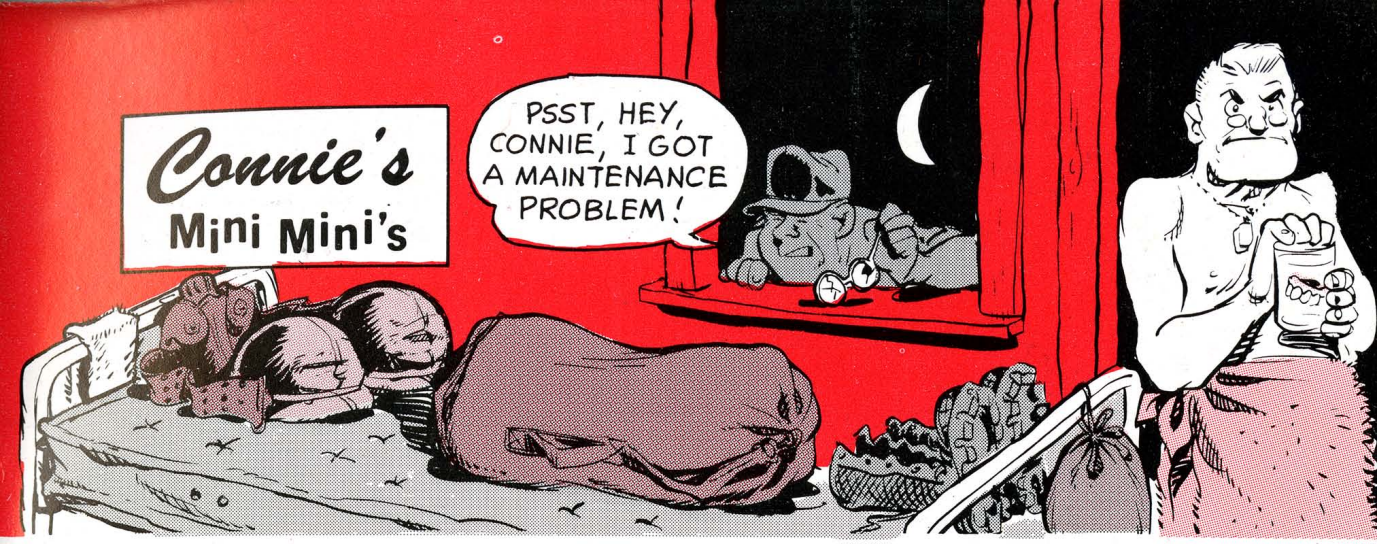
TM 5-618 (Jan 69), Paints and Protective Coating.

TM 9-213 (Jul 62) Ch 1, Painting Instructions for Field use.

SB 11-573 (Feb 69), Painting and preservation supplies available for field use for Electronics Command equipment.

Fed Cat C8000-IL-A (Oct 69), w/ changes Paints, dopes, varnishes.

You'll find 1-, 2-, 3-, and 4-in stencils for marking your equipment in your No. 1 and No. 2 Common Tool Kits.



Address For Tool EIR's

OK, so you've got a tool that's not worth a tinker's dam! Well don't sit there, fill out a DA Form 2407 and send it to: CG, U.S. Mobility Equipment Command, ATTN: AMSME-MAO, 4300 Goodfellow Blvd, St. Louis, Mo. 63120. That's the address for complaints on all individual tools in the 5100 group and class.

Operator Licensing

You'll find the latest info on licensing of operators of powered or self-propelled U.S. Army Mobility Equipment Command equipment in AR 600-58 (May 70), and TB 600-1 (May 70). If you didn't get your pubs, better have your pubs man order them on DA Form 17.

5-Ton Mirrors

Now you can get West Coast-type outside rearview mirrors designed especially for your 5-ton truck. Complete assembly (mirror with mounting bracket) comes under FSN 2540-242-5417 for the right side; FSN 2540-242-5418 for the left side.

O-1's Fly Longer

That's right! Turn your O-1 over to support for an engine change every 1800 hours. The TBO for **all** O-470 engines was increased per message AMSAV-EOR 05 1520 (5 Jun 70).

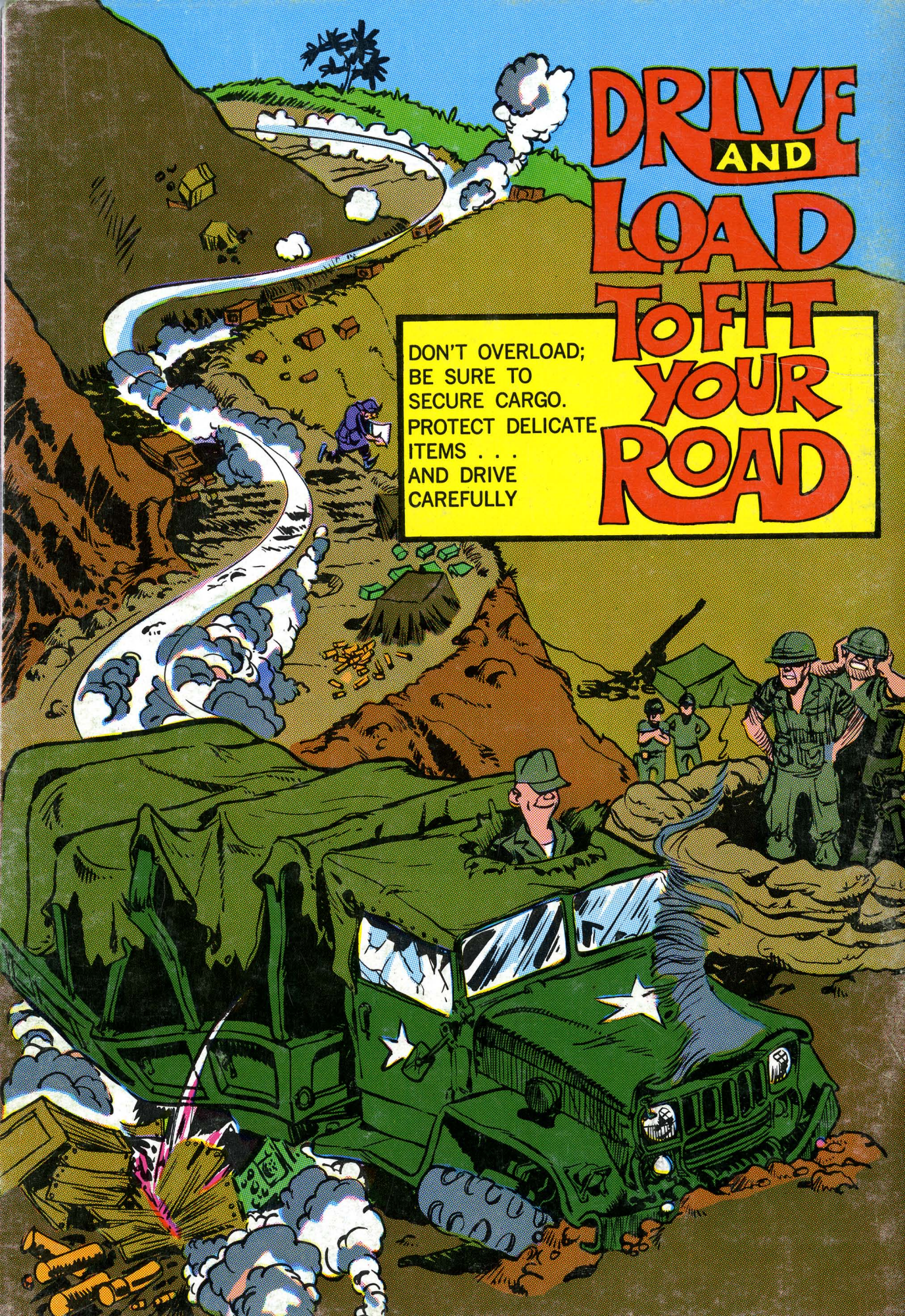
Fill 'Er Up!

If the lube chart for your commercial-type wheeled vehicle says you can use 10-W-30, engine oil, look for MIL-L-2104 engine oil, in Fed Cat C9100-IL (Jun 70). FSN 9150-068-9474 will get you 1-qt, FSN 9150-246-7923 is good for a 5-gal pail, while FSN 9150-946-4709 will get you a 55-gal drum. The Army does not use multi-viscosity 10-W-30 in tactical vehicles.

Sample Thisaway

Eye Ch 3 (12 Jun 70) to TM 55-1520-228-20, Kiowa (OH-58A), Crewchiefs. Para 5-65 now tells you how to take the fuel sample called for in the Daily inspection. The "pill" used to check for contamination is in Detector Kit, water, automotive and aviation fuels, FSN 6640-892-2264.

Would You Stake Your Life right now on the Condition of Your Equipment?


DRIVE AND LOAD TO FIT YOUR ROAD
DON'T OVERLOAD; BE SURE TO SECURE CARGO. PROTECT DELICATE ITEMS . . . AND DRIVE CAREFULLY